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BULLETIN OF THE

TAYLOR SOCIETY

AN INTERNATIONAL SOCIETY TO PROMOTE THE SCIENCE
AND THE ART OF ADMINISTRATION AND OF MANAGEMENT

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HOW can psychology contribute to the solution of the real management problem——inspiring interest, understanding, initiative, effort, precision, and personal effectiveness in cooperative activity? —Page 166.

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AUGUST, 1924 VOL. IX., NO. 4

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TAYLOR SOCIETY

AN INTERNATIONAL SOCIETY TO PROMOTE THE SCIENCE AND THE ART OF ADMINISTRATION AND OF MANAGEMENT

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Comment

THIS BULLETIN completes the publication of the papers of the national meetings of the Taylor Society during the year 1923-24 and includes one of the many excellent papers presented at the meetings of the sections during the past season. Other papers from these section meetings will be published in the October BULLETIN. Readers will observe that the current issue is somewhat smaller than usual; that is because the recent issues have been made larger than usual that papers might be available as early as possible following the meetings at which they were presented.

AS THE BULLETIN goes to press reports are not yet available of the Prague International Management Congress which the Managing Director is attending, together with the following American members of the Society: George W. Coleman, Morris L. Cooke, Lillian M. Gilbreth, Harry A. Hopf and Robert T. Kent. We shall hear later of the consummation of the plans for the Congress announced in earlier BULLETINS, and of its achievement in arousing interest in management as an important international problem, and also of the international aspects of the work of the Taylor Society, realized anew in the contacts of the American delegates with their European fellow-members at the Congress and in various centers visited by the various members.

THE library of American management literature assembled for the Masaryk Academy in Prague in connection with the International Management Congress as reported on page 186 has reached significant proportions. It was the idea of those who conceived the plan that this library should be made complete and kept up-to-date that it might be the mecca for European students of management. The Society will be glad to hear from members and member firms who will cooperate in further contributions of books, monographs or exhibits of management practices. Members may cooperate also by adding the Masaryk Academy to their mailing lists for monographs, reprints and similar publications.

DECEMBER 4 to 6 are the dates set for the next annual meeting of the Society at the Engineering Societies Building, New York. The first day's program will include two joint sessions with the Management Division of the American Society of Mechanical Engineers. Frederick W. Taylor's paper on Shop Management, originally presented at a meeting of the A. S. M. E. in June, 1903, will be re-presented for discussion. George D. Babcock of the Holt Manufacturing Company and R. E. Flanders of Jones & Lamson Machine Co. will present papers giving the results of their experience in reorganizing for greater and more economical production. The sessions of the Taylor Society will include a business meeting; additional papers on operating problems; a session on psychology (as voted at the meeting last January) for which Professor Walter V. Bingham of Carnegie

Institute of Technology is arranging a program and securing speakers; a session on cooperative endeavor of employees and management, with illustrative cases; a session on the teaching of management, organized by a special committee of teachers of management headed by Professor Erwin H. Schell of Massachusetts Institute of Technology; and a session organized especially for younger members of the Society. The complete program will be announced later. Meanwhile, members are urged to make their plans for attendance and participation.

CONCURRENT with the first of a series of papers on industrial psychology we offer our readers reviews of five current books on a variety of psychological subjects, considered from the point of view of their value to practical business executives. To the reader interested in training in industry, in psychological tests, in the everyday psychology of factory relationships with subordinates, associates and superiors, in the problems of group relationships, or in a general introduction to the field of applied psychology, we commend the review section, pages 188 to 192, and the review-editorial on page 161. Reviews of other books on various phases of industrial psychology will follow in later issues of the BULLETIN.

MANAGEMENT Week, October 20 to 25, is an activity which Taylor Society members expect to support. As a joint enterprise combining in community effort the representatives of various technical societies and as a concentrated nation-wide effort to call to the attention of the business man outside technical organizations the possibilities of better management, Management Week merits every member's interest and participation. Preliminary plans for this year are reported on page 185.

THE absence of the Editor in Europe augured a BULLETIN without editorial comment on the papers published. Since the leading paper in this issue is the Editor's own on Industrial Psychology, the BULLETIN asked several psychologists and industrialists to comment on his paper. Vacation schedules have interfered with the returns but the BULLETIN is happy to present the statements which follow:

I

DR. PERSON makes a splendid plea for the cooperation of psychology and industry in the search for verified laws of adult behavior. It was not his concern to discuss any of the practical difficulties involved. From my experience in industry, however, I feel that there are practical difficulties involved which will require considerable clear thinking before "leaders in industry and psychology can join in research."

I believe there will always be difficulty in the actual working out of cooperation unless these facts are realized:

1. That psychologists cannot observe industrial workers as zoologists observe insects, but
2. That they must, in the capacity of psychologists, hold down real jobs in industry which will give them natural—not artificial—contacts with workers.
3. That these jobs must not occupy so many hours a day that no time is left the psychologist for keeping up with his profession and for the contemplation and compilation of facts in connection with his day's work.

Many ultra-academic people whom I have interviewed with the idea of getting some psychological work done could never have performed any useful work which would have given them normal contacts with workers. On the other hand, many a personnel worker might have made a real contribution — might have been Dr. Person's "psychologist of no mean order"— if his work had not so depleted his energy that when evening came he did not have enough left to make notes. Years ago I started to keep a notebook. I would have volumes of interesting material if I had continued it. But I stopped keeping it in the early stages of my "career." Any industrial relations worker knows why.

Industrial managers who really wish to make a contribution to industrial psychology will have to work out a part time scheme. That, I think, will be the only possible way of both getting and "mulling over" material which will lead to the determination of psychological laws and principles for the service of industry.

MARY B. GILSON.[1]

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[1] **Superintendent of Employment and Service, The Joseph & Feiss Company, Cleveland, Ohio.**

II

DR. PERSON'S statement of the status and problems of industrial psychology is so comprehensive and judicial that it is not an easy matter to formulate the criticisms he has asked for. I shall make at this time only two comments.

The best part of this paper is the section on habits; but why is so little said about available techniques for habit study, and principles for correct and rapid habit formation? It rather amuses a psychologist to read that "psychology has as yet given us only a few tools, such as intelligence tests, for use in a very limited field of management," when he sees lying around, largely ignored by industry, so many psychological techniques and principles which the psychologist himself values more highly than he does the much discussed intelligence tests—for example, the very tools he has used for years in studying the learning process and the acquisition of skill. A reduction of waste in training apprentices and new operatives is only one of the benefits to be expected when the experimental psychologist, the job analyst, the time and motion study expert and the industrial training specialist each becomes more familiar with the others' problems, techniques and tools.

One other point: Fatigue is a problem to be approached jointly by the psychologist, the physiologist and the manager. I grant instantly that fatigue is a physiological phenomenon. But the feelings it engenders—of discomfort, lassitude or irritability of temper—are subject-matter for psychology; and so too is the behavior of the fatigued worker, whether this behavior takes the form of dogged effort, of soldiering, of insubordination, or "radicalism," or merely of lapses that occasionally lead to accidents. A physiologist who in his investigations of fatigue ignores the psychological point of view omits aspects of vital concern to management. Here, as elsewhere in industrial personnel research, the problem is complex, and cooperation makes for sound progress.

W. V. BINGHAM.[1]

III

DR. PERSON in his article on "Industrial Psychology" has limited the use of mental tests too exclusively to the employment office. If the term "employment" is replaced by the term "personnel management" which is by no means a "limited field of management," and if the place of mental tests is properly recognized in this phase of management, their importance and value will be much more truly estimated. For if tests, by giving information—more precise and reliable than has been available heretofore—bearing on native intelligence, special capacities, acquired skills or potential abilities are valuable in the selection of applicants for employment, they are equally valuable in the selection of employees for training (by indicating whom to train and how), in promotion, in transfer, or in any other situation in industry where a judgment concerning a human being must be made which needs to take into account his characteristics and qualities.

The tests are tools, of course, but valuable tools in highly important situations. They are moreover the vehicles through which the principles for which Dr. Person asks will probably come. Principles rarely spring full-grown from the scientist's head, and when they do, they need still to be verified by many careful observations quantitatively evaluated.

Mental tests, in addition to their immediate and tangible usefulness, furnish an entering wedge by which opportunities for observation in industry by psychologists are created. In the very situation, moreover, which Dr. Person calls the real problem of management, "that of inspiring interest, understanding, initiative, effort, precision and personal effectiveness in cooperative activity," their use is obviously an initial step. It is men and women in whom all of these desirable qualities are to be inspired. The manner in which this may be accomplished will vary necessarily with the individual differences within the groups who are to be so influenced. A first step in such a program would therefore seem to be the determination of the nature of the material which is to be worked upon. With an adequate inventory, such as may be obtained by the use of tests—now existing or to be devised in the future—of the capacities and interests of a group of men and women, the task of influencing their energies toward any given end should be much more easily accomplished.

In taking stock of the services which psychologists have rendered to industry one should not neglect to mention their significant development of the rating scale. Recognizing the variability and unreliability of human judgments, they have devised methods of rating and judging employees which in a large measure compensate for these factors and eliminate their ambiguous features.

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[1] Carnegie Institute of Technology, Pittsburgh, Pa.

There are, as Dr. Person points out, many fields to which psychologists have not yet made positive contributions. He also points out that the opportunities for psychologists to work in industry have been meager and the years few. He recognizes that the scientific method is slow, painstaking and laborious. It should be remembered moreover that the number of psychologists engaged in industrial work is very small. In 1922 a bulletin of the National Research Council reports the number of American psychologists engaged in industrial work as only forty-five. Of these probably only a very small fraction were giving their full time to industry.

Given time, opportunities and adequate rewards (for psychologists, like other men, need food, clothing and shelter), the problems which Dr. Person indicates will be tackled one by one.

DR. ELSIE OSCHRIN BREGMAN.[1]

IV

BUSINESS executives are showing a marked and growing interest in the application of known fundamental principles of psychology to practical problems of industry. Dr. Person's timely paper on "Industrial Psychology" will be of distinct value in stimulating closer relations between psychologists and industrial managers. It suggests ways of cooperation between them for the purpose of developing a science of psychology which will effectively formulate basic laws for the guidance of management in influencing personal effectiveness in industrial cooperative activity.

In an increasing number of corporations today employees are selected according to physical standards, general intelligence, special aptitudes, and adjustment to specific industrial tasks as well as general industrial environment. Yet a genuine human interpretation of industry is primarily spiritual in its nature, and Dr. Person rightly senses that industrial psychologists hitherto have not adequately touched the ethical aspects of the managerial problem, which his paper stresses. The problem of management involves two additional psychological phases: one, to inspire adult employees to initiative and pride in work; another, to lead and teach them in constructive cooperative effort.

Behavioristic psychologists who would study the field of industry thus find themselves constrained to a dual task in helping the art of management. They should first develop devices for measuring definite group interactions and reactions to composite stimuli in order to discover causes of conduct. Then they should formulate basic principles for assisting industrial managers to influence and guide human conduct in cooperative work relations.

The solution of this task presupposes much preliminary controlled psychological research in the industrial field. The behavior of the adult employee must be studied as an integral whole, both in its reactions to social relationships and to group activities. Man is more than an economic unit. His work relations are inseparably interwoven with his domestic, social, civic, political, and religious ties. Therefore springs of conduct must be discovered in order to eliminate old habit patterns and create new ones in adults. Psychological research must be undertaken into the nature and utilization of such basic incentives as honor, ambition, action, pride, power, beauty; or, again, into financial rewards and relief measures so as to appraise their inspiring and constructive force in relation to the adult worker's disposition plus his established habits. This means classifying dispositions and psychologically evaluating different organic reactions to different kinds of work under varying conditions of industrial environment and management. Managerial problems of leadership, adjustment, incentives, and control can never be divorced from the choices and the group conduct of the individuals who carry on industrial activities. The subject matter of industrial psychology is industry as a region of human behavior.

Dr. Person rightly concludes that psychological research which is to assist in solving these intricate managerial problems can be effective only through cooperation between psychologists and industrial executives. This cooperation must be one purposing to understand what industrial groups are, and how individual desires, aims, wills, are expressed in group activity. The industrial psychologist should have opportunity to enter shop or office for objectively observing normal adult behavior in its reactions to normal work environment. This involves studying the worker's interrelations with various groups and their leaders. It may even involve active participation of the psychologist in group activities in order to arrive at psychological evaluation of group thought, group interest, and group functioning. Professional industrial psychologists should also have opportunity for free discussion with experienced executives and workers, whose practical observations of normal human reactions under present managerial conditions of industrial environment are being increasingly recognized as having scientific value for psychology.

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[1] The Psychological Corporation, New York City.

Industrial psychology has achieved actual success by means of quantitative measurement in the fields of advertising and selling, and also in the phases of selecting and placing personnel. However, industrial psychology has not hitherto studied the development of native impulses as acquired habits which represent racial custom and culture; nor has it formulated definite principles which may assist management in understanding and guiding the conduct of adult workers. Dr. Person's able paper invites industrial psychologists to this new field of research, and challenges industrial managers to active cooperation.

HENRY C. METCALF.[1]

Is Your Organization a Group?

IS THE personnel of an organization a group subject to the laws of group behavior, and is the problem of organization esprit a problem of creating or finding a "dominant interest" for the organization which enables it to compete with the other groups (with their dominant interests) to which the members of the organization belong?

This and many similar questions are inspired by an important study[2] which has recently come to our attention. Lindeman's "Social Discovery" belongs primarily to the field of sociological literature, but logically it merits recognition also as having a place in the field of industrial literature. To those executives who are concerned with the problem of industrial psychology, to all for instance who have found Mr. Dennison's address[3] interesting and suggestive, this new book will be more than stimulating. It may point the way towards solution of the problem of organization esprit.

The author, a graduate of Michigan Agricultural College, undertook a number of studies of the organizations and actual functioning of certain agricultural cooperative marketing associations. He was not content, as is usually the case, with a merely descriptive report; a keen mind led him into an inquiry concerning motives for organization and the essential forces which kept the organizations functioning, the reasons for differences in methods and results, the nature of the stimuli, the nature of the reactions, and so on. The result is a study concerning group behavior, with numerous questions and many generalizations of general import. The outstanding feature of the work is that its inferences and generalizations are derived from the study, in the field, of marketing organizations in action, and are not the product of "rational explanation" from a library desk.

The first quarter of the book consists of a critique of the historical and current methods of sociological research (the reader should remember that the problem of management is a sociological problem!), and attention is given to the historical, the analogical, the logical and the statistical methods. All are essential but no one by itself is sufficient. Social research has been ineffective because individual studies have utilized one or another insufficient method, and the result has been neither scientific, accurate nor usable. "The most palpable fact concerning most of them (reports) is that they are not only not used but that they are not usable." "The non-utility of most sociological investigations is not due to untrained research specialists nor to the unwillingness on the part of the public to accept the social scientists' findings, but to the method of investigation."

The historical method (study of past behavior) can only furnish clues to the explanation of current behavior; the analogical method (comparison of different kinds of current behavior) can only direct attention to things which if proved might be significant; the method of logic assures thinking of its effectiveness, but it knows nothing about the accuracy of its premises; the statistical method "is not *the* means of discovery but rather a check upon discoveries already made . . . statistics cannot be regarded as an integral part of the method of social research but merely as the mathematical check on its discoveries." What the author says about the statistical method will cause many a statistician to sit up suddenly and reach for his club, "Statistics is not a method of discovery; it is a method of tabulating discovered facts." "Social science is chiefly concerned with precisely those facts which either escape the statistical method entirely or are injected too hastily, namely, the facts of relation." *All* of these methods are essential to scientific social investigation.

The second part of the work is devoted to an exposition of a proposed step towards improvement of methods of social discovery. It is an hypothesis of the author that the point of attack in social investigation is "the group." "The individual of the modern world who has no vital adherence to and expression through a group is an individual who plays a diminishing role; he is insignificant and unimportant to the social process in direct proportion to his lack of membership in a functioning group." "The task of social scientists is to discover the nature of these groupings and their functional attributes. The methods hitherto utilized by social scientists are inadequate for the task."

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[1] Director, Bureau of Personnel Administration, New York City.

[2] "Social Discovery"; by Eduard C. Lindeman, Republic Publishing Company, New York. Pp. xxx, 375; $1.00 (paper).

[3] "Who Can Hire Management?" *Bulletin of the Taylor Society,* Vol. IX, No. 3, June, 1924.

While disbelieving in such concepts as "consciousness of kind" or "group mind," and in a group psychology entirely distinct from individual psychology, the author believes that the nature and functioning of the group can be described only in psychological terms, and that the group involves a psychological quality not adequately expressed in the categories of either current individual psychology or current social psychology. New categories must be devised, and the place where the facts are to be discovered which will permit the devising of such categories is in the field in study of groups *in conflict*. Behavior of the group is adjustment to environment and the nature of adjustment to environment is revealed most clearly when groups are in conflict. Adjustment is conflict of one sort or another. "A group is a representation of certain interests which all members share. An individual becomes part of a group in order to advance some particular interest . . . If attention is directed to the actual functioning of a group, e.g., it soon becomes evident that the group stands to represent, advance, enhance some very definite interest."

The following is a most significant inference: "It was formerly asserted that the chief significance of a group consisted in the fact that the individuals comprising it had sacrificed certain individual prerogatives, rights, privileges, et cetera, in order to achieve the larger collective end. But it could not be discovered that the farmers who became members of the cooperative associations had done anything of the sort. On the contrary, they were chiefly interested in enhancing their own individual interests."

In the latter part of the work (details of which we leave to the reader's own search) the author devotes considerable attention to this matter of individual and group interest—to "dominant interest." Among certain concluding "postulates of empirical social theory" we find the following: the group is not a new entity but a new relation; the group is a means to something and not an end in itself—is the important means utilized by the individual in achieving his ends; the behavior of the group is not merely an adjustment to environment but a readjustment of environment; the environment is a stimulus which must be interpreted in terms of human purposes; the group is a relation between individuals which represents a vital interest common to all members; opposing interests ultimately appear in the form of group conflicts and the group manifests its more complete behavior at these intersections of interest; the interests for which groups stand as representatives can never be adequately evaluated unless conflict is precipitated.

This is an inadequate consideration of this important book. But perhaps it is sufficient to excite the interest of the reader of this review. If he reads the book he will not fail to ask himself many important questions. Has the development of means of communication and travel brought individuals into such contact as to make the group the principal instrument by which the *individual* may achieve *his* ends, and made the group the phenomenon for social observation? Are those who think in terms of individual rights and individual contracts thinking in terms of concepts which individual behavior has abandoned? Are workers' organizations and owners' organizations and managers' organizations the vital things in future industrial affairs? Is the development of esprit in a particular organization which cross-sects these other organizations dependent upon finding an interest in the organization which will be a dominant interest common to all its members?

H. S. PERSON.

On board S. S. "Ohio," July 15.

THE biologists who aim to illumine the social sciences by analogies from the animal level are laboring from a misapprehension. Mankind may have some lessons to learn from the ants and bees, but the biologists cannot apply ant and bee methods of investigation and observation to human beings. It is possible to observe ants and bees without becoming a part of the ant-and-bee environment—without becoming a stimulus to change the behavior of the ants and bees. It is not possible to study human beings and human groups without becoming a part of the human environment and hence a possible or potential stimulus. (Eduard C. Lindeman, *Social Discovery*, p. 178.)

Industrial Psychology[1]

A Layman Considers Its Status and Problems

By H. S. PERSON

Managing Director, Taylor Society, New York

I

A PAPER presented at the meeting of this Society held in New York in January[2] offered a plea for the inclusion in our programs of papers in the field of psychology, recognizing psychology as a science basic to any science of management. The reaction of the audience to that plea was emphatic. It was demonstrated that the time had come when intensive study of that subject by this Society would be profitable.

The reaction of industry to the work of the psychologists is itself an interesting psychological phenomenon. A few years back, when we were riding easily on a rising market and were not conscious of fundamentally serious problems of management, business generally was disposed to look upon psychology, with more or less indifference, as a science which was academic, theoretical and detached from practical affairs. With the exception of a few books on the psychology of advertising, there was before the war no literature of industrial psychology. During the war marked interest in the subject developed, so that the reviewer of a book published in 1918 was inspired to say: "The year 1776 has been dubbed 'annus mirabilis' . . . Perhaps the future will write down '1918' as 'annus mirabilis.' It dates the end of the world war, the founding of the league of nations and the publication of the first attempts concretely to apply the new knowledge of human nature to the solution of economic ills." We have not time to inquire into the reasons for this sudden development of interest in psychology, but among them would surely be found three: consideration of the nature of behavior as part of the problem of securing united effort in the conduct of the war; the practical application by psychologists, on a large scale, of intelligence and trade tests to the classification of individuals in the army; and the nature of the publicity concerning this latter application of intelligence tests—a publicity quite comparable as to quantity and accuracy to the publicity given scientific management at the time of the Eastern Rate Case hearings.

During the past two or three years, as a result perhaps of perplexities of management arising from the industrial disorganization caused by a world war, the literature of industrial psychology has increased greatly—even to the extent that we laymen now apparently permit our imaginations to attribute to psychology more than it seems to be able to offer and more than psychologists have claimed. We hear, for instance, of cases of the successful utilization of general intelligence tests in the selection of individuals in particular plants, and our imaginations at once construct an immediate far-reaching utilization of psychology in industry. We forget the words of Hugo Münsterberg that the study of individual differences itself is not applied psychology, but is simply "the presupposition without which applied psychology would remain a phantom"[3]—the establishment of the foundations for an applied psychology yet to be developed. We disregard the words of Professor McDougall, uttered as recently as last year, that the psychologist can "do little more than any intelligent man, in the face of the concrete problem of behavior"; that he can simply "give some statement of the general principles of human nature and action; and, after studying the individual, he can exhibit the particular action as an instance illustrating and conforming to those principles."[4] We forget particularly that psychology has as yet given us only a few tools, such as intelligence tests, for use in a very limited field of management, and has not given us definitely formulated principles to assist in the art of management.

In fact, if one were to make a reasonably extensive survey of the literature of psychology, I am certain one would be impressed by two things; *first,* that the psychologists themselves are generally conservative and modest in making claims for the positive achievements of their research and especially for the immediate practical value to industry of the results of that research; and *second,* that the exaggerated impression which we laymen have received of practical results, usable for purposes of prevision and control, has probably come from the utterances of amateur or dilettante psychologists whose enthusiasm has been more noteworthy than their information or their judgments.

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[1] A paper presented at a meeting of the Taylor Society, Cambridge, Mass., April 25, 1924.

[2] "Management as an Executive Function" by John H. Williams; printed in *Bulletin of the Taylor Society,* Vol. IX, No. 2, April, 1924.

[3] "Psychology and Industrial Efficiency," p. 10.

[4] "Outline of Psychology," p. 125.

II.

We have seemed to assume that the relation of industry to psychologists is that of consumers to producers, that the psychologists have warehouses filled with apparatus for our immediate use; and we suddenly decide to ask for immediate delivery. In the long run our relation *is* that of consumers to producers—to specialized and expert producers; but first, there is need for our cooperation in the further development of a science of psychology and in the development of a dependable technique of applied psychology. We must offer the psychologists facilities for research in the field of our special interest. So far their researches have been restricted largely to laboratories, schools and psychopathic institutions, and to a few special phases of industry. Because of restricted facilities their study has been chiefly of animals and of children, and to a very limited extent of adults. The pressing, practical problems of industry are those pertaining to the behavior of adults. If we seek verified laws of adult psychology as one of the bases of a science of management, it is a responsibility of industry to cooperate with the psychologists in their research—to state our problems clearly, and above all, to organize a relationship with the psychologists which will facilitate their coming into shop and office for the purpose of making scientifically controlled observations of human reactions to industrial environment under various conditions of management. It is an obligation of industry as ultimate beneficiary to take the initiative. I am certain we shall find the psychologists willing and ready.

Beside this responsibility of industry, for its own benefit, to offer facilities to the psychologists, industry has an opportunity to cooperate in a more direct way. The experienced executive and worker may himself be a psychologist of no mean order—of course not a professional and highly scientific psychologist, but one comprehending enough as to purpose and technique to give valuable assistance to professional psychologists. In an earlier day, when psychology was conceived to be a study of the mind, subjectively considered, when its technique was introspection, it was believed that no one could be a psychologist except the cloistered student communing with his soul. But in these days of psychology conceived as a *science* of the mind or as a *science* of behavior, it is admitted that there may be fairly competent non-professional psychologists among those whose daily activities bring before them a continuous procession of human beings reacting naturally to their environment of practical affairs. Common sense which is based on intelligent accurate observation and thinking by men of wide experience with men is recognized as of scientific value, because it can offer data, secured under natural conditions, which may be tested and valued by professional psychologists in comparison with data secured by the latter by better controlled and more scientific methods, but under more restricted and sometimes artificial conditions. Says Professor Mc Dougall in one of the latest books on psychology: "It is a principal feature of this book that, in this all-important matter of the explanation and understanding of human behavior or conduct, it holds 'common sense' to be in the right; and it holds many of the psychologies and philosophies of the past to be in the wrong, because they rejected the common-sense procedure and offered in its place a variety of fantastic theories . . . In this book it will be my chief endeavor to show . . . how the common-sense explanation may be refined and made more definite and systematic."[5] Industry can offer the psychologists facilities for research along these lines and can itself make observations and records which will add to the data necessary for the development of the science of psychology.

III.

Those of our members who have reacted with enthusiasm to the plans for a series of papers by psychologists, and who intend to secure the most profit from those papers, will presumably take steps to inform themselves concerning the present state of the science of psychology. The business man cannot find the time to secure an information which is exhaustive or accurate in detail, but there is no reason why he should not acquire a perspective which will be reasonably sound and most helpful in interpreting what the psychologists will have to say.[6] If we give ourselves the benefit of such a preliminary survey we shall probably derive from it general impressions somewhat as follows:

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[5] "Outline of Psychology," pp. 126-127.

1. That the psychology of today is a behavioristic psychology. As late as thirty years ago we were taught in our college courses that psychology was the "science" of the soul, or of the mind, or of conscienceness, or of ideas, or of special faculties the exercise of which resulted in such experiences as remembering, comparing, thinking, judging and so on, a "science" introspective in its technique. Today as the result probably of the profound influence of the science of biology, and more particularly of the influence of that greatest of American psychologists, William James, who pointed the way some thirty-five years ago, we find psychologists in general agreement that psychology is the science of the nature and causes of conduct and of its control. Notwithstanding great differences between groups represented by such leaders as Watson, Thorndike, Dewey and Freud, essentially all may be classified broadly as behaviorists. The change in point of view during the last three decades is radical and of far-reaching importance.

2. That there are many differences among psychologists in their interpretations of conduct with respect to its origin, nature and control, and in their attitude towards the methodology of psychological investigation. From the perspective of one who is not a psychologist, there seem to be four groups of psychologists:

a. The mechanical reflex group—represented by J. B. Watson—who hold the hypothesis that all expressions of conduct, whether manifested in breathing or coughing, in instincts, emotions or consciousness, in thinking or what not, are but complex combinations of simple mechanical physical-neural reflexes, the nature of which is to be determined by laboratory experiments.

b. The quantitative measurement group—represented by Edward L. Thorndike—who place great emphasis upon methodology and attach supreme importance to quantitative measurements and classifications of traits and behavior under a great variety of conditions of normal human activity, and hold the hypothesis that the answer to the question of the nature and control of conduct is to come ultimately from such quantitative measurements.

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[6] If half a dozen psychologists were requested to recommend a small psychological library for the business man, it is probable that no two would submit the same list. The following works are fairly representative of the various points of view in psychology:

1. Cooley, "Human Nature and the Social Order," Charles Scribner's Sons, 1923.
   Revised edition, with an introduction treating of the place of heredity and instinct in human life; originally published in 1902; the philosophic approach to the relations of society and the individual.
2. Dewey, "Human Nature and Conduct," Henry Holt & Company, 1922.
   The point of view that behavior is biologically purposive; emphasizes importance of habits in the trilogy of impulse, habits and intelligence.
3. Drever, "Psychology of Industry," E. P. Dutton & Co., 1921.
   An English book dealing with applied psychology in industry and commerce; concerned with principles rather than details of results.
4. Gates, "Psychology for Students of Education," The Macmillan Company, 1923.
   Elementary exposition of general principles and of the psychology of learning. Reviewed on page 188.
5. James, "Psychology," Henry Holt & Company, 1912.
   The classic exposition of the general principles of psychology with a broad philosophic perspective.
6. James, "Talks to Teachers on Psychology," Henry Holt & Company, 1899.
   A non-technical, brilliant exposition of the general principles of psychology; although application is made specifically to problems arising in the teaching of children, the subject is handled in such a way and the problems chosen are such as to make the book valuable as "talks to managers on psychology."
7. Kellogg, "Mind and Heredity," Princeton University Press, 1923.
   Consideration of current problems in the fields of psychology, education and economics from the point of view of a biologist.
8. Link, "Employment Psychology," The Macmillan Company, 1919.
   The application of scientific methods to the selection, training and rating of employees. An impartial, conservative account of the use of psychological tests under working conditions in a representative industry.
9. McDougall, "Outline of Psychology," Charles Scribner's Sons, 1923.
   The point of view that behavior is biologically purposive and not merely mechanical and reflex.
10. McDougall, "An Introduction to Social Psychology," John W. Luce & Company, 1923.
    A consideration of social behavior from the point of view of the psychology of the individual.
11. Pillsbury, "The Essentials of Psychology," The Macmillan Company, 1920.
    Elementary but more advanced than Gates.
12. Tansley, "The New Psychology and Its Relations to Life," Dodd, Mead & Company, 1920.
    A well-balanced statement of psychology from the point of view of the followers of the Freudian school.
13. Watson, "Behavior: An Introduction to Comparative Psychology," Henry Holt & Company, 1914.
    Exposition of the mechanical reflex theory.
14. Woodworth, "Psychology, A Study of Mental Life," Henry Holt & Company, 1921.
    A general exposition of psychology carrying forward the work of James by the inclusion of the principal additions made by more recent experimental work.

c. The group represented by Dewey and Mc Dougall, who hold that conduct is the biologically purposive self-expression of an organism, and that in addition to mechanical, physical-neural reflexes there are operative inherited instincts or impulses and a capacity for consciousness independent of but utilizing the individual's mechanical equipment.

d. The psychoanalist group, influenced by Freud and Jung, whose concepts are not yet clearly formulated and whose contribution cannot yet be definitely measured, but who have undoubtedly made an important contribution to psychology. This group attaches great importance to instincts and emotions, and especially to the suppression of instincts and emotions, as the key to the explanation of the varieties of human conduct.

3. That notwithstanding the differences among psychologists with respect to the nature and origin of conduct and with respect to methodology, interest has focused largely on investigation of instincts, habit and intelligence—whatever their origin—both as causes and manifestations of behavior; and there seems to be agreement that a better understanding of these is essential to the formulation of principles relating to the interpretation and control of conduct.

4. That under the direction given by James, psychology is becoming an empirical and positive science: " 'empirical' to mark the fact that psychology relies upon the great method common to all natural sciences, namely, observation of concrete facts and the induction of general rules or laws from these concrete particulars, rather than upon deduction from any *a priori* principles; 'positive' to mark it as the science of mind as it actually exists and operates, to distinguish it from the sciences primarily concerned with the ideals, norms, standards, or rules of right thinking and conduct."[7]

5. That as an empirical and positive science psychology has so far been compelled to conduct its research principally in laboratories, in the controlled observation of animals, and in a very limited way in the less controlled observation of humans; secondarily in public institutions in more or less controlled observation of defectives; and to a limited extent in the schools, in more or less adequately controlled observations of young people.

6. That as an empirical and positive science, psychology has had too little opportunity to conduct controlled research in industry with respect particularly to the special characteristics of *adult* behavior following employment—industry's vital concern.

7. Finally, that most psychologists are conservative in their claims with respect to present achievements, although they are confident of ultimate results; that the most they claim is to have discovered a few basic principles—such as that of great differences in the inherited characteristics and aptitudes of individuals—differences which, however measured, tend to cluster about the norm; to have devised and begun the verification of certain tools for the use of society—such as intelligence tests; and to have acquired a new point of view and a new technique of research.

IV.

Our particular interest is in industrial psychology, and because experience makes us more competent to appraise results in that field, we are likely to come away from our preliminary survey with more definite impressions concerning industrial psychology, perhaps somewhat as follows:

1. That the actual results of research in the field of industrial psychology during the past fifteen years have been relatively meager. It must be acknowledged that to have made a beginning is of greatest significance; but it must be acknowledged also that that beginning has been but a beginning, a scratching of the surface of the problem. Certain limited researches in the field of selling and of advertising; certain limited researches with respect to the determination of special aptitudes for special operations; and certain researches with respect to the construction, verification and valuation of general intelligence tests;—these about complete the list. We have *discussed* imitation, monotony, automaticity, instincts of self-expression, creative effort, and so on; but there have been practically no controlled researches in industry with respect to these, and most of our talk has consisted of hypotheses based on an as yet incomplete psychology of animals and of children.

2. That most, although not all, of these achievements have been in the nature of probability formulae or correlations resulting from quantitative measurements; and while these are of utility under special conditions, they have not led to the discovery of causes of conduct or fundamental laws for the guidance of management in influencing conduct.

3. That most of the achievements in industrial psychology have pertained to very special aspects of management, such as the selection of workers; and have not yet touched the real management problem,

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[7] McDougall, "Outline of Psychology," p. 38.

that of inspiring interest, understanding, initiative, effort, precision, and personal effectiveness in cooperative activity.

In fact, we cannot yet say we have an industrial psychology. I would not be understood as unappreciative of the value of tests—intelligence, special aptitude and other; or of the value of probability formulae pertinent to the reaction of consumers to color, type, format, and other features of advertising copy; or of the psychological characteristics of attention, attraction, persuasion and the dynamics of getting the signature on the dotted line. But my mission this evening is to help to establish a correct perspective, and particularly to impress our membership that industrial psychology is only in its infancy, and that the problem of this society is not the simple one of calling upon psychologists to deliver at once usable laws and principles, but the serious one of determining how we can cooperate in affording facilities for further research.

V.

In appraising the contributions of psychology to industry we must distinguish between the contribution of *tools to use* in management and the contribution of *principles to assist in the art* of management.[8] It is interesting that the contribution of those psychologists who claim to be most scientific—who use the laboratory and the method of quantitative measurement—is tools to use in certain definite managerial operations, such as intelligence tests in selection and measurement of reactions to copy, type and color in advertising; while the contribution of those psychologists who are rated less scientific[9] by those of their colleagues who interpret the word scientific in a narrow way, offers most with respect to general principles to assist in the art of management. General psychology has already discovered much of value for the executive which has not been translated into the language of industrialism. The problem of management is essentially the problem of inspiring, leading and teaching men in cooperative effort; it is concerned only to a limited extent with definite unit reactions to definite unit stimuli; it is to a much greater extent concerned with organic reactions to composite stimuli. Psychologists like James, Dewey, Woodworth and Tansley and social scientists like Wallas, Cooley and Ross have furnished industry, in psychological and sociological literature, some of the best textbooks on management. In these books may be found a wealth of hypotheses and even of principles which will prove to be of great value to industrial executives in solving what they consider the major problems of management.

VI.

In that more extensive and intensive research which I should like to see this Society inspired to promote, I hope the psychologists will be able to give more attention, because of facilities to be offered by industry, to what I call adult psychology. I recognize that psychologists generally are not likely to sanction a distinction between animal and youth psychology on the one hand and adult psychology on the other hand, which has been suggested several times in this paper. Their attitude generally is that of one psychology for all animal life. To quote an eminent authority: "It seems probable that mind has the same nature wherever and whenever it exists or manifests itself, whether in animals, men, or superhuman beings, whether in the new-born infant, the fool, or the wise man."[10] Yet the psychologists who have that point of view seem generally to agree that in the minds of human beings intelligence and consciousness are sufficiently different, qualitatively or quantitatively, from those same elements of the animal mind as to make them matters of special consideration. Similarly it seems to me to be an interesting and important question whether there are not differences between the infant and the adult human with respect to the relative parts played in conduct by instinct or impulse, habit, and intelligence. If research should prove that there are such differences, it would be of the greatest importance to management. For management is concerned, in its day-to-day problems, much more with adults than with the young—adults who have established habit patterns under a great variety of chance conditions and who by chance have been brought together into cooperative activity.

Most psychologists seem to overemphasize the part played by instincts and underemphasize the part played by habits.[11] This may be because research and experiment have been principally with animals, in which instincts are relatively few and conspicuous, and with young people, in whom instincts are still free and have not been crystallized in habit patterns. If psychologists could be provided with facilities for extensive controlled observation of the behavior of adults in office, shop, sports, household, church and club, I imagine much more importance would be attached to the part played by habit in adult conduct.

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[8] This distinction was called to my attention by Mr. E. D. Smith, Dennison Manufacturing Company, Framingham, Mass.

[9] I do not subscribe to this rating.

[10] McDougall, "Outline of Psychology," p. 35.

[11] e.g.—"Habit too much used as an explanatory principle," McDougall, "Outline of Psychology," p. 177. However, this was not true of James and is not true of Dewey.

John Dewey, whose approach to psychology is not that of the laboratory experimenter, but that of the philosopher and interpreter of the results of laboratory experiments generally, in a recent book has given special attention to the importance of habit. In "Human Nature and Conduct," habit is the subject of the first part of the book, and impulse is the subject of the second part. At the beginning of the second part, in an explanation of why his consideration of impulse follows instead of precedes his consideration of habit, Dewey says: "Habits as organized activities are secondary and acquired, not native and original. They are the outgrowths of unlearned activities which are part of man's endowment at birth . . . Why should what is derived and therefore in some sense artificial in conduct be discussed before what is primitive, natural and inevitable? Why did we not set out with an examination of these instinctive activities upon which the acquisition of habits is conditioned?" And he answers his own question by stating that "In conduct the acquired is the primitive. Impulses although first in time are never primary in fact; they are secondary and dependent[12] . . . the *meaning* of native activities is not native; it is acquired."[13] In other words, in the life history of any one of us impulse and instinct existed before habits were acquired; but as adults, in most matters of conduct, our habits and not our instincts are primary. In another place Dewey says: "The native stock of instincts is practically the same everywhere. Exaggerate as much as we like the native differences of Patagonians and Greeks, Sioux Indians and Hindoos, Bushmen and Chinese, their original differences will bear no comparison to the amount of difference found in custom and culture. Since such diversity cannot be attributed to original identity, the development of native impulses must be stated in terms of acquired habits, not the growth of customs in terms of instincts . . . the countless diversity of habits . . . springs from practically the same capital-stock of native instincts."[14] This point of view that habit, the acquired, is primary in most specific instances of conduct has made a strong appeal to executive after executive to whom I have presented it. Each has testified that it fits the facts of his experience, which has been chiefly with adults in factory and office. If greater cooperation between industry and psychologists should eventually be realized, I hope one line of research will be directed towards verification or disproval of this hypothesis.

VII.

Ten or a dozen years ago I was inspecting the development of new management methods at a New England factory, as a guest of the general manager and the consulting engineer. My interest in a machinist who was working in accordance with new, standardized methods having been noted, I was informed that the machinist had been with the firm some sixteen or eighteen years, and that in all the time prior to the beginning of the development of new methods he had not changed his chance-acquired methods in any noticeable particular and had not made a suggestion relating to improvement of machine, conditions or methods; but that within the year since the new standard methods worked out by the consulting engineer had been explained to him and practiced by him, he had made a dozen suggestions worthy of adoption—the first within an hour after he had started to work in the new standard way. That incident made a profound impression on me, for it was one of my first plant inspections, and my attitude towards scientific management had up to that time been susceptible to *a priori* arguments of academic friends to the effect that standardization of operations destroys initiative and weakens intelligence. Since that time I have observed it to be generally the fact that where scientific management with its standardization, planning, scheduling, instruction cards, progress records and other mechanism has been introduced, people generally show more interest, originality, initiative, and intellectual self-expression than they had done before the development of the standards, and more than is characteristic of other people engaged in similar work in conventionally managed plants.

What is the psychological inference to be drawn from these observed facts? The answer to this question was suggested by the Gilbreths ten years ago[15] and is fully developed, I believe, in Dewey's exposition of the nature of human behavior in "Human

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[12] P. 89. [13] P. 90. [14] Pp. 91, 92.

[15] Lillian M. Gilbreth, "The Psychology of Management," Sturgis & Walton Company, 1914; pp. 178, 179, 218, 235, 236, 240, 312, 313. Frank B. and Lillian M. Gilbreth, "Fatigue Study," The Macmillan Company, 1919; pp. 140, 146 and *passim.*

Nature and Conduct." Adult behavior is the expression of an aggregate of habits acquired by chance reactions to environment; in these habits native and individual impulses and instincts have been crystallized; habits become strengthened by repetition; incentives to the retention of acquired habits gradually become dominant over incentives to the acquisition and substitution of new habits and the probability of the formation of new or substitute habits decreases as the individual becomes older. Habits can be eliminated or changed only by the substitution of new habits, not by will power except as will power is involved in the practice of new overt acts; habit is an adjustment to environment and, adjustment once successfully made, there are fewer and fewer occasions for readjustment, that is, the intervention of intelligence. Therefore in plant after plant, in which executives, foremen and workers have been engaged and set to work "as is," and no serious thought has been given to the quality of individual or coordinated effort, we find as many varieties of methods (habits) as there are persons who have acquired their methods (habits) under different, chance environmental conditions, and we find little incentive to call on intelligence. But in a plant in which thought has been taken concerning the variety and quality of methods or habits; in which questioning of habits has become a part of the environment; in which specialized intelligence has experimented with and appraised the relative value of existing and possible new habits; in which desirable new habits have been formulated into standards; in which the substitution of the new habits for the old is facilitated by specifications and instructions concerning definite overt acts; in which explanation of "the reason why" accompanies the offering of new habits or standards;—in such plants we find not only that the acquisition of new habits is relatively easy; but also that the necessity of new environmental adjustments involved, the offering and explaining them, and the natural resistance before conviction and acceptance arouse attention, stimulate interest, call out intelligence, and generally summon to a new freedom the instincts—previously imprisoned in old habits—of curiosity, self-assertion, acquisition, construction, and so on. I ask whether this is a tenable explanation of certain observed facts. To explain them is a problem illustrative of the nature of many a problem in management which awaits investigation, and in the name of this Society I ask leaders in industry and psychology to join in the research which will determine the facts, and give us the psychological explanation.

VIII.

I should like briefly to call attention to several other phases of management the investigation of which by psychologists would be of particular service to industry.

The problem of training personnel in industry—executives, foremen and workers—offers a challenge to thorough psychological investigation. The problem of selection is of course important but it is essentially only a first step toward adjustment to the environment. Organizations are going concerns with existing personnel; few can begin *de novo* and select an entire new personnel in accordance with approved psychological tests. Personnel selected in accordance with conventional methods—essentially by chance—must be lifted by education and training to higher planes of specific performance and general cooperation; and new personnel, selected by psychological tests, must likewise be adjusted to the environment of the organization and to specific tasks. Individuals selected by intelligence, special aptitude and trade tests are selected chiefly with reference to general capacity to adjust to environment or capacity to perform certain technical operations. To education and training there remains the task of making these capacities effective: by determining the precise nature of individual differences and aptitudes, and placing and promoting employees in accordance with these differences; by fostering understanding of plant purposes and developing plant spirit; and by giving practice in overt acts of adjustment to environment. These overt acts are the stimuli which arouse interest, exercise and strengthen intelligence, call forth initiative and nourish the instinct for creative effort.

And while education and training in industry will undoubtedly rest on the same psychological foundations as all education and training, it is reasonable to assume that investigation and experiment will discover many important psychological principles, pertinent especially to the training of adults in office and factory, which have not been and will not be discovered in investigations and experiments now being conducted in connection with the education and training of young people in the schools. The education and training which faces the problem of eliminating old and creating new habit patterns in adults must inevitably observe principles and include elements not especially pertinent to the education and training of children and youths who have not yet acquired many or fixed habit patterns and whose individual characteristics, impulses and instincts are relatively free.

Monotony[16] in industrial work is another problem pressing for adequate psychological investigation. Understanding of the nature and causes of monotony is of importance to management. Was Münsterberg right when he expressed the judgment that monotony results more from disposition than from the kind of work?[17] If monotony is a result of the kind of work—and not a few articles are being written from that point of view these days—then a duty of management is to eliminate or modify work of that nature, even though its product be socially useful. But if monotony be caused by the disposition of the individual reacting, then the problem of management is quite different. Dispositions must then be classified, the reaction of different kinds of disposition to different kinds of work must be determined, tests of disposition must be devised; and then one of the managerial problems is selection and training for particular work in accordance with general intelligence, special aptitude and disposition.[18] This is no mean problem for the psychologist, for one's disposition is the sum total of one's instinctive tendencies,[19] and although we all inherit the same instinctive tendencies, they are weighted differently in our individual combinations of them.

Another problem pressing for adequate psychological investigation, also of the greatest importance to management, is the problem of incentives. We know very little about incentives in human beings—the incentives of habit-governed adults as distinguished from the incentives of instinct-free children, or the incentives of persons responsible for the support of families as distinguished from the incentives of persons without dependents. In psychological laboratory experiments on animals, the incentives have generally been of the pleasure-pain type—punishment with whip or electric shock or by withholding of food for wrong reactions; pleasure of food or warmth or light or other pleasant stimuli for correct reactions. These experiments tell us little about incentives usable in management, for they are wisely taboo in the governance of human beings working voluntarily together. Industry has utilized principally what Mrs. Gilbreth has called "indirect" incentives[20]—rewards of the nature of wages, bonuses and premiums, or punishments of the nature of fines and the withholding of bonuses. But industry has always utilized also to a greater or less extent what Mrs. Gilbreth calls "direct" incentives—appeals to ambition, pride, pugnacity, love of play and so on. Incentives of this class have been given much attention of late, but most of the appraisal of them has been *a priori,* and psychology has not yet investigated their nature and incentive power. I should not be surprised if psychologists should eventually verify by scientific methods what many an experienced executive has inferred from long contact with people: that there is a great variety of incentives; that the incentives by which an individual is stimulated have a direct relation to his disposition and habit patterns; and that the majority of individuals in the present industrial regime react most faithfully to such stimuli as assurance of continuous employment and continuous income, and payment in proportion to effort and accomplishment.[21] We must not be unmindful of the obvious fact that income in the form of money is a powerful incentive because by its nature the recipient is able to convert it at will into the widest variety of instinct-satisfying forms. We prize that with which we may tomorrow satisfy any instinct we may then favor—self-respect, acquisition, creation, or what not—more highly than that which satisfies only one and the same instinct day in and day out.[22]

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[16] To be distinguished from, although closely related to, fatigue, which I consider primarily a physiological problem. Apropos of the problems of monotony and fatigue, attention is called to the articles, "An Experimental Investigation of Repetitive Work" by Isabel Burnett and "Monotony" by S. Wyatt in *The (January, 1924) Journal of the National Institute of Industrial Psychology* (London), founded in 1921 for the application of psychology and physiology to industry and commerce. The first of these articles reported a research conducted on behalf of the Industrial Fatigue Research Board, and the second was a paper by the investigator of that Board. These citations are made chiefly to illustrate the fact that whereas in the United States psychologists have to assume the burden of most of the research work which is being done, in England and other European countries industry is interested in organization for and support of such research.

[17] "Psychology and Industrial Efficiency," 1913, p. 193.

[18] Taylor's selection and training of Schmidt for handling pig iron, for instance, involved selection in accordance with physical strength, intelligence and disposition, so that the work would not be unhealthful or monotonous.

[19] McDougall, "Outline of Psychology," p. 351.

[20] See Gilbreth, "The Psychology of Management," ch. 14.

[21] It seems to me that the investigations of John Commons ("Industrial Government") and of Whiting Williams ("What's on the Worker's Mind") bring out strongly the fact that the most powerful incentives in industry are fear of unemployment (or satisfaction with continuous employment) and dissatisfaction with an inadequate real wage (or satisfaction with an adequate wage).

[22] For another point of view see Mayo, "The Irrational Factor in Human Behavior," *Annals of the American Academy of Political and Social Science,* November, 1923.

I suggest also that there is a field of investigation by psychologists, of major importance to management, presented by the intimate relation of the life of the individual outside office and shop to the life of the individual inside office and shop. One does not cast one's old self off and take on a new self each morning as one enters the factory gates. One's life is an integral whole. One's behavior inside the plant is influenced by outside conditions. The stimuli to which one reacts at any given moment may have been received at another time and place. My conduct at home in the evening may have been determined by contact with an obnoxious caller at my office during the day, or my discourteous behavior to a courteous caller at my office may have been determined by a worry on account of illness in my family. A member firm had an operative whose productivity was low. No reason for it could be found either in her intelligence and specific capacity or in working conditions, but it was discovered that her parents took all her earnings. A diplomatic third party worked out an arrangement whereby she paid her family a stipulated sum for room and board and retained the balance of her earnings for her personal use. She had a new incentive for interest in life and work, and output increased immediately. In another instance the performance record and earnings of a man suddenly declined. No explanation could be found in working conditions. It was discovered that there was illness in his family with resultant financial worries. Arrangements were made to relieve the financial worry; his normal disposition reappeared, and his performance record promptly went back nearly to normal. These are but illustrative instances to be found throughout industry. Psychologists in their study of industrial behavior must take cognizance of the fact that behavior in industry is not a result solely of *industrial* relations. We may for convenience classify activities as industrial or religious or social or family, but life itself does not break up into parts in that way. Home and church and club and neighborhood, husband, wife, children and dependent parents, illness and pressing debts—such things in great number accompany men and women to their work and play their part in determining their behavior in office and shop.

If life be an integral whole, if the behavior of men in industrial relations be in any considerable degree the result of stimuli received elsewhere than in office and factory, then industrial psychology must have for us a new and larger meaning. It must embrace in its scope consideration of the influence of stimuli outside industry on industrial behavior and of stimuli within industry on behavior in wider social relations. Industrial psychology becomes but a phase of social psychology. The problem of industrial relations becomes involved in the problem of human progress. Therefore the opportunity offered to industry to cooperate with psychologists in further psychological research is one which is of far-reaching importance and gives challenge to all its ability and resources. And it gives no less a challenge to the ability and resources of the psychologists.

MAN behaves. Psychology is a method for studying and interpreting his behavior. Groups behave. Collective psychology is a method for studying and interpreting group behavior. May the social psychologist or the sociologist make use of the method used by the psychologist? He may not for the obvious reason that he is dealing with a relation of a different class. If a group of twelve persons were twelve persons, i.e., a congeries of twelve individual persons, then the psychological method would suffice for the social scientist. But a group of twelve persons is not twelve persons; it is a new quality. The individuals behaving as a part of the group do not behave as individuals . . . An accurate understanding of the behavior-pattern of each individual in the group would undoubtedly assist in arriving at conclusions regarding the group, but the sum total of these individual behavior-patterns would not constitute the behavior-pattern of the group. (Eduard C. Lindeman, *Social Discovery,* pp. 127, 128.)

Significant Savings in Textile Mill Operations[1]

Results of the Substitution of Scientific Management for Tradition in the Jackson Mills

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THE cotton manufacturing industry is old and well established in New England. Starting over a century ago, it has been for a long time its largest and most important industry. In general it has not given as intensive study to the possibilities along the lines of "scientific management" as some other industries. Tradition and old customs have played a very important part in the operation of a cotton mill. The industry has been seriously handicapped by customs, built up by the experience of its century's existence. Henry Ford in his book, "My Life and Work," tells in a few words about his business, "We fortunately did not inherit any traditions and we are not founding any. If we have a tradition it is this: Everything can always be done better than it is being done." The textile industry on the contrary has been built up by tradition. A mill agent whose opinion is held in very high regard has often said, in discussing the possibilities of remarkable savings in textile mill operations, that if a cotton manufacturer could get off to some place entirely isolated from other mill centers and build a new mill, hire all new people whom he could train properly, and build up new methods, the results would be startling! In some cases, however, old customs are being gradually overcome, and a new attitude is evident. Mill operatives, after they have been shown, realize the advantages to themselves which result from a rearrangement of their work. Mill managers, on the other hand, realize the necessity for increasing the efficiency of operatives and machinery. They know that the most important step of progress is to break away from the long established methods of operation, in cases where the methods are obviously inefficient but difficult to break down because of custom.

There is urgent need for savings in textile mill operations at the present time, especially in the New England mills. The prices of cotton are high and will probably remain upon a much higher level than in previous years. Wages today are higher than ever and will remain probably upon a much higher level than that of about ten years ago. Much has been said in regard to the rapid development of the textile industry in the southern states. Twenty to twenty-five years ago there was hardly any cotton manufacturing outside of New England. Today there are twenty million spindles in New England and fifteen million in the cotton-growing states. Since 1900, when there were fifteen million spindles in New England and four and one-half million in the South, there has been an increase of 34 per cent in New England against 248 per cent in the cotton growing states, according to figures of the United States Department of Commerce. There is constant agitation in the legislatures of the New England states to bring about the enactment of 48-hour laws, which are aimed directly at the textile industry. The difference in the legal running time of the mills in New England and the South is a serious handicap to the industry here.

It is of great importance in striving for economy in the production of goods to have a good layout of machinery and buildings. In a continuous process, such as there is in the cotton mill, it is necessary to have a steady flow of material from operation to operation with no backward steps and with a minimum amount of handling. In drawing up specifications for a new mill, engineers and mill managers of today plan for a building which is radically different from the popular conception of a cotton mill. Re-inforced concrete buildings with large windows replace the former brick mill construction with small windows. Dustless stripping systems in the card rooms are perfected, so that the card tenders are able to do the stripping, thereby eliminating "strippers," who usually work only a small percentage of their time. Automatically controlled heating and humidifying systems, which provide uniform temperature and humidity, result in better operating conditions and increased

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[1] Paper presented at a meeting of the Taylor Society, Boston, Mass., April 26, 1924.

production throughout the mill. A "humidifier man" in each department to look after the old system of humidifying is unnecessary, because one or two men can look after the entire mill, the heart of the new system being located in the basement. Individual motor drives are important aids in increasing production and in eliminating bad work due to overhead shafting troubles, and some saving is accomplished by eliminating shafting men in each department. Power floor-scrubbing outfits are means of savings and give better results as compared with the old method of having scrubbers in each department, who usually worked a small percentage of their time.

Probably most of the long established mills move the material from operation to operation by means of hand trucks and freight elevators. Cotton storehouses in some cases are not located in proper relation to the opening room, necessitating an auto truck with a crew of five or six men to transport cotton from storehouse to mill. In some cases cotton is piled several bales high in the older types of storehouses — a practice which results in extra labor and cost. Picker laps, boxes of roving and yarn are trucked to and from the elevators and delivered by the elevator man to the carding, spinning, and weaving departments. The cloth rolls are piled on trucks and carried to the cloth room, usually at some distance from the weave rooms. This method means lap carriers, roving and yarn truckers, filling carriers, cloth handlers and elevator men. It also means a large number of trucks and boxes, which take up valuable space, cause more or less confusion, and represent a good deal of money in upkeep.

At the Jackson Mills a complete conveyor system which handles the entire product from the raw cotton to the finished cloth is in operation.[2] The bales of cotton stored on the upper floors are sent down a spiral chute to the opening room on the first floor. After passing through the machines the cotton is blown through pipes to the sixth floor, where the picker room is located. The picker laps, as they are made by the pickers, are put into cradles on the conveyor, and delivered to the card rooms by means of a gravity-roller conveyor, a spiral chute, and a horizontal belt conveyor, from which the card tenders take the laps while the cradles are traveling along very slowly. The empty cradles continue on and are returned to the picker room on an inclined elevator. The boxes of roving and yarn are put onto horizontal belt conveyors by the machine tenders as soon as they doff their machines, these boxes traveling by spiral chutes and belt conveyors to the spinning, dressing and weaving rooms, where they are automatically diverted onto unloading stations. The empty boxes and bobbins are returned on inclined and vertical elevators. The cloth rolls are put onto an inclined elevator as they are taken from the looms, and then a belt conveyor delivers them to platforms in the cloth room which is located in another building across the yard.

In making use of a complete conveyor system the material in process can be moved from one department to another with marked savings in cost. A report of a study made by the engineers showed an actual saving of about twenty-five hands throughout the mill. In addition the jobs are made easier for the employees by the special trucks, which eliminate heavy lifting, and this increases the efficiency of the mill as a whole. The stock is in much better condition than in the average mill, due to the absence of trucking. There is a marked saving in the number of bobbins used in the carding and spinning rooms, due to the method of returning empty bobbins. There is constant and quick control of the amount of stock in process because the surplus or storage is wholly on the conveyor system.

New methods of operation or a rearrangement of the work result in economy and increased efficiency. Planning the work for each department in order to eliminate unnecessary waiting for material and at the same time to keep always a minimum quantity of stock in process is important. It is a general practice for the overseer of each department to run the right number of machines and to assume the responsibility of keeping the next department properly supplied. Without central control, however, there is constant fluctuation in departmental production, friction between department heads, large stocks on hand, and decreased efficiency throughout the mill.

One of the problems is to keep the looms in operation by providing a supply of warp yarn on loom beams, properly sized and with the harnesses and reed tied in, ready for weaving. With the looms running on different grades of cloth, the warp beams vary as to the number of threads, harnesses, and kind of reed. In the preparation of these beams the judgment and experience of the overseer of the dress room was formerly relied upon to determine the right number of each kind of warp beams. The weaving department also estimated the number to be required, but it was largely a matter of guesswork, and almost always there were a large number of beams on hand but at the same time several looms waiting for warp beams. A careful analysis of what the looms really required resulted in a prepared schedule of work for the dressing department to follow. This reduced the number of beams on hand from six hundred to three hundred and eliminated all waiting for beams. It was found that one slasher[3] could be stopped. Friction between the weaving and dressing departments was eliminated, and the loom production was increased because the looms were kept in operation. The stock in process was reduced considerably, which was a distinct advantage.

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[2] For a good description of this system, with illustrations, see Robert T. Kent, "A Conveyor System that Revolutionized a Cotton Mill," *Management and Administration*, April, 1924, p. 411.

In the card rooms the overseer formerly determined the number of roving frames to be run to supply the spinning frames. But usually there would be too much roving on hand or the spinning room would be short. The same was true of the filling yarn for the looms. Accordingly the work of the departments was coordinated for the purpose of having the proper supply of material on hand at all times. Now the work is planned, and each overseer has definite instructions to follow as to the constant operation of the right number of machines, and there his responsibility to the following department ends. This has resulted in the elimination of idle machine time (because when too many machines in a department were run, it was the custom to stop early on Saturday mornings).

Time study and analysis of the various jobs in the mill, the nature of which has been determined by experience and custom, result in the development of new and better facilities for increased efficiency and significant savings. In the spinning room a study was made of the work of doffing the warp frames. There were three crews of doffers, each crew having a section of the frames to doff. At times all three crews would be doffing and this would result in an overflow of yarn to the spoolers. The outcome of the study was the rearrangement of the work and the elimination of one crew of eight doffers. Special trucks are prepared in advance for the operatives, the boxes being enlarged to hold one-third more bobbins. Now the crews alternate the work of doffing so as to get a uniform flow of yarn to the spoolers. While one crew is doffing the other does other work such as changing travelers, picking rolls and sweeping. When one crew finishes doffing, the other crew starts in. The stoppage of the spinning frames is reduced to a minimum, six frames of 252 spindles each being doffed in ten minutes.

A study of the work of the men who handled the yarn and empty boxes in the spool room resulted in changing the spooler frames in order to eliminate dumping the yarn into the trays on the frames. The boxes of yarn are placed on a small stand, and by a change in the method of passing the yarn and picking up the spools and empty boxes, two men were eliminated.

A study of the work of cleaning and sorting filling bobbins, returned from the weave room, resulted in building a special table which facilitated the work tremendously. The operatives were shown the best way to sort the bobbins and to prepare the boxes for the filling spinners, and although their earnings were increased, there was a saving of the cost of three men.

There were four or five men in the weave room picking up empty bobbins from the loom-cans. Each man did the work in his own way, and emptied the cans twice a day. After a study of this work, a special truck was provided and definite instructions were issued as to the method to pursue. The result was a saving of three men, the cans being emptied only once a day and the work being made easier by the new truck.

Standardization, as far as possible, of product, of methods, and of equipment such as trucks and boxes, is a distinct advantage in the efficient and systematic operation of a cotton mill. Constant changes in roving, yarns, or styles of cloth reduce the efficiency of the machines and of the operatives. Where one standard number of yarn and one standard number of roving and one style of cloth are made with no changing on the roving, spinning frames, and looms, a great deal of productive time is saved. Where loom changes are frequent, careful planning is necessary in order to obtain the maximum efficiency and economy. Confusion and delay result where no standards are followed as to the size and number of boxes and trucks. At the Jackson Mills boxes for the carding and spinning rooms are made and repaired according to standard specifications, and the trucks in the carding, spinning, and weaving rooms are of special design, carefully worked out to obtain the greatest benefit from the conveyor.

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[3] See page 175, column 1, for a description of the slashing process.

An excellent example of standardization of work is that of the slashers. The slashing process consists in passing the yarns through a bath of starch which has been boiled up in water to the consistency of thin glue. After this treatment the yarns are dried by passing them over hot cylinders. This process is essential to give the yarns the necessary resistance to the abrading effect of the loom. Unless a proper amount of size has been added to the yarns, they will be unable to resist the weaving action of the loom and will break. Sometimes poor warp sizing will completely tie up the production of the weave room. According to previous practice, cotton mills operate their slashers almost hit-or-miss, allowing the tender to operate as he sees fit under the general direction of the overseer. There is no way of exact regulation of the final size and moisture content of the warps. At the Jackson Mills this problem was attacked systematically. A survey was made at the start to find out just how much the yarns were already being sized and how far the work deviated in quality from the proper average. Analyses were made to show these values and to indicate whether the warps were being sent from the slashers to the weave room with the necessary amount of moisture to insure good resistance to the tensional strains of the looms. After this information was obtained, the action of the slashers was carefully studied, and fifteen variable factors connected with their control were worked out as the causes of poor or good work according as they might be poorly or well controlled. As a final result of this work, the operation of the slashers has been practically removed from guesswork—almost to an exact art. The overseer is able to impose on the machines the exact schedule for each grade of warps, which he knows to be proper for uniform results. The guess work element has been removed because the size itself is boiled under strict control and a recording device gives a permanent record of every batch of size and shows whether it was properly boiled at the proper time and for how long. A size re-circulation insures a constant supply of uniform size to every slasher. At each slasher the size box, through which the yarns pass, is automatically regulated to a fixed temperature predetermined as best for the purpose. Each slasher runs at a fixed speed for a given grade of warps, the speed depending on the heaviness of the goods and certain other factors. For the control of the machines the operative has a speedometer which is graduated in terms of the styles of goods being run. If he is slashing a D warp, the machine is run with the indicator of the speedometer on the letter D, and so on. The beneficial results of this work are shown in the reduction of the fluctuations in the sizing of the warps to one-half their former magnitude. The maximum possible speed of the machines is also being obtained safely, due to the strict regulation. This results in faster production, accompanied by much improved uniformity in the product, and consequently the lowest possible production cost. To one familiar with the usual uncertainties of slashing, this work will be of especial interest and significance.

A study of the method of preparing the filling spinning frames for doffing showed that the average length of yarn left on the end of the bobbin to be pulled off by the battery girls in the weave room was sixty inches, the lengths varying from one to three yards. This great variation in lengths made it difficult to standardize the work of the battery girls as to the amount of yarn that they should pull off. A stop motion for the spinning frame was developed, resulting in a uniform length of about eighteen inches to be pulled off by the battery girls. This saved a great deal of the battery girls' time and also cut down the amount of waste yarn.

A rearrangement of many of the jobs along the lines of specialization is extremely advantageous to the management and to the operatives, resulting in increased earnings to the latter and lower machine costs to the former. A revolutionary change in the weave room is an excellent illustration showing that much can be done along these lines in the textile industry. The weavers were in the habit of doing work other than actual weaving. The average weaver's duties, in addition to running the looms, were to be on the watch for cut-marks, to remove the cloth roll at the cut-mark, to make pickouts and to aid the room-girl in mending smashes, to help the battery girls, and, in some cases, to make minor repairs to the looms. The loom-fixers' duties were to repair and adjust looms, and to put in new warps, removing the empty beam and lease, with the necessary trucking to and from the "spare floor." In the performance of these duties the loom-fixer went to the supply room for supplies, helped other fixers with big jobs, and made rounds of the looms of his section every day to estimate the number of new warps needed on the following day. There was a loom cleaner for every fixer because the looms were cleaned thoroughly before a new warp was put in. A careful analysis of each of these jobs was made and the final result was a rearrangement of the work in the entire weave room. The operatives are instructed what to do and what *not* to do. The weavers do nothing but weave, that is, piece up broken warp threads and start up the looms. They have time to look over the cloth on the looms for weaving defects, and to look over the warp threads for bunches and bad places which are liable to cause breakage. The former battery girls, who put filling yarn into the loom batteries, are now weavers' helpers, since they assist the weavers in any of their duties. Section weavers are supplied to piece up smashes and make pick-outs and to start up looms with new warps, acting as "gang bosses" over the weavers and weavers' helpers of their sections. The cloth is removed by schedule, each loom being doffed once a week by men who have a special truck to use in taking the rolls to the conveyor. The design of the truck was worked out to eliminate lifting the rolls, which contain twice as many yards as formerly when the looms were doffed by the weavers approximately twice a week. This means a saving, due to less loom stoppage and less waste on the brushing machines. The loom fixers' duties are reduced to answering the call of the weavers to looms needing repairs. All work formerly done by the fixers, pertaining to removing leases and empty loom beams and putting in new warps, is done by a crew of men under the direction of a foreman who has charge of the loom cleaners also. These men are assigned to the looms needing changers and cleaners and are available for work in any part of the weave room. The supplies for the fixers are brought to them, each fixer having his own bag which is filled each day.

The weavers and loom fixers are now working on more looms but their work is not any more difficult under this new arrangement. The earnings of the weavers, fixers, and helpers were increased because of the saving in the number of weave room operatives and of the increase in production per operative per hour. The production per loom per hour under the new method remained practically the same as under the old method.

Other opportunities exist for successful accomplishment along the same lines. By arranging the jobs so that the difficult part of the work will have the attention of the skilled worker and the rest of the work will be done under a systematic pre-determined method, there will result significant savings as well as increased earnings to the operatives.

BEING a member of an impersonal organization does not always injure the loyalty and effectiveness of a worker. At its best, the "traditions of the service" may establish a sort of personality behind the worker, mythical yet very real, which holds him up to his best performance and gives him the confidence and sense of support which serve to overcome the material discouragements of the lonely worker. In order to have this power for good, the service must itself have a character which can inspire loyalty by being worthy of loyalty. Modern business in its typical character as money-making does not easily inspire this kind of loyalty, except to some extent among the salaried employees. If it does actually succeed in establishing a real *esprit de corps,* it must be on account of the particular character of the particular business, and in the last analysis it must rest on some large and strong personality. The larger the business, the harder for this personality to make itself felt through the mechanism of orders and reports which are its ordinary means of communication. The morale of a service is a force which derives partly from the existing organization, but even more largely from its past. In fact, it is more a function of time than of mass, and quality counts far more than quantity. The business which would build up this intangible asset cannot afford to strive solely or chiefly for quantitative expansion. (J. Maurice Clark, *The Economics of Overhead Costs,* pp. 133-134.)

NEXT MEETING
December 4 to 6
Engineering Societies Building
New York City

The Unemployment Problem[1]

A Study by a Personnel Manager Who Considers His Job as Something Bigger Than Hiring and Firing

By EDGAR D. SEBRING[2]
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IN ORDER that we may intelligently discuss the unemployment problem it is necessary that we agree on the meaning of the term unemployment. As I see it, unemployment is that condition arising when any number of workers are available, who are capable and willing to work, but cannot find work because of industrial maladjustments within the plant or industry or because of general economic conditions at home or abroad.

Industry in its effort to solve this problem will not concern itself with the unwilling or the disabled worker, unless such disability was contributed to by, or caused by and in consequence of his employment, in which case industry or his employer should contribute to his case.

Causes of Unemployment

The causes of unemployment may be divided into two main groups:

1. *Internal Causes*—arising from conditions within individual manufacturing plants and embracing: (a) personal factors, such as strikes and lock-outs, and disability; (b) impersonal factors, relating to inefficient management resulting in high labor turnover, excessive costs, ineffective sales methods, lack of stock, etc. All of these produce a more or less continuous percentage of unemployment from month to month and year to year.

2. *External Causes*—due to conditions operating outside of the plant or industry, which are: (a) of economic origin—resulting from seasonal variations, over-expansion of industry, business depression, wasteful systems of commodity distribution and deficient labor placement facilities; (b) of political origin—due to immigration, tariff policies or international relationship.

We are most vitally interested in the frequent temporary unemployment arising from conditions within the plant and the recurring acute unemployment due to influences outside the plant. It is interesting to note that in New York State, unemployment because of labor disputes, etc., over a period of twelve years, is less than 1 per cent, and these figures are regarded as representative of the situation generally.

The Extent of Unemployment

When the President's Conference on Unemployment met during the period of business depression in 1921, the first difficulty encountered was the meagerness of the available data concerning the exact nature and extent of the evils with which the Conference was concerned. A committee, chosen from among the best qualified economists in the country, was asked to furnish the conference with comprehensive statistics concerning the volume and distribution of existing unemployment, comparative conditions in previous years, and the relation of cycles of unemployment to cycles of production, of prices, of volume of trade, and of other economic variables that make up the complicated composite that is generally known as "the business cycle." This committee was obliged to conclude that all estimates were to such an extent guesswork as to be of little value.

It was very evident that no basis was yet at hand for a scientific solution of one of the most persistent, most crucial and most widely discussed of public problems.

The committee urged upon the conference the primary need of more reliable quantitative studies. The Pollak Foundation for Economic Research offered a prize of $1000 for the best essay on "a Study of Unemployment and Business Cycles." The prize was won by Mr. William A. Berridge, and for those who wish to go into the statistical aspects of the case, a study of the essay with accompanying charts would be advisable. To quote Mr. Berridge:

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[1] Paper presented at a meeting of the Central New York Section, Syracuse, January 11, 1924.

[2] Also President, Industrial Relations Association, Elmira, N. Y. District and Secretary-Treasurer Southern Tier (N. Y.) Section of the Taylor Society.

What do the American figures on employment and unemployment show, as to the relation between unemployment and the business cycle? A general answer may be given in a nutshell. The unemployment figures fail to tell us the actual number of persons unemployed at a given time—except with very large elements of error and guesswork which would spoil the results for any practical purpose. In this connection the reader may recall the wide variety of unemployment estimates in circulation at the time of the President's Conference on Unemployment, in the summer of 1921—estimates ranging from two million to six million unemployed persons. But unemployment data, when taken in conjunction with the data representing the number employed according to pay-rolls, enable us to construct a reliable, continuous barometer or index of employment cycles.

Such an index can be shown to have a definite value to various groups in the community, not only during depressions, when unemployment is rife, but also during more active times. The index of employment has four main uses:

1. Most directly, employment registers the course of the labor market; that is, it shows relatively how "easy" or how "tight" the labor market is at any given time, much as bank reserves reflect the state of the money market.
2. Employment is some indication of the general course of production, since the hiring and the firing of labor are largely resorted to by employers when they wish to increase or curtail output.
3. A third practical use is shown by the relation of employment to buying power. The total fund of purchasing power flowing into the hands of wage earners at a given time is conditioned directly by the state of employment.
4. An equally important feature, shown indirectly by an employment index, is the cycle of social welfare. Largely as a result of fluctuations in the economic prosperity of wage-earners, there are found to be pronounced cycles of suicide, crime, prostitution, pauperism, marriages, migration, and other social problems.

In other words, the problem of cyclical employment stands in a position midway between the economic and the social phases of the business cycle; it is a connecting link. Consequently, a reliable index of employment may be expected to prove of more general use than would an index for any purely economic or purely social phenomenon. The following analysis, therefore, concerns not only the public-spirited citizen, but even more tangibly and directly the social student and worker, and likewise the business man, whether he be interested chiefly in employment management, in production, or in sales.

What is an "index of employment"? It is a series of figures so constructed that its fluctuations will reflect changes in the relative intensity of employment between two points of time, without necessarily measuring the total volume of employment or of unemployment—or even the number of persons totally unemployed. In other words, the index method should yield a continuous curve of employment, the high points of which represent active employment, the low points severe unemployment, and intermediate points the varying degree of seriousness of the problem.

Generally speaking, there are three groups of persons engaged in gainful occupations in the United States: 25 per cent work on farms, raising crops, live stock, etc.; 33 1/3 per cent are engaged in manufacturing, mining and building trades. The remainder carry on the tasks of distribution and perform the necessary work connected with transportation, wholesale and retail trade, and personal and professional service. In this study I think that we are chiefly concerned with the industrial wage earners or those engaged in manufacturing and mechanical industries. It is estimated that over 3,500,000 or ¼ of the industrial wage earners (12,800,000) were out of work June 1, 1921. The average number idle during normal times is about 1,800,000. The average number of days lost each year by industrial wage earners, according to the best evidence available, is about 42 or about 14 per cent of their total working time, and about 35 days exclusive of sickness. The figures do not show this to be true of every industry, although, broadly speaking, it is true of industry as a whole. Building and clothing trades show a relatively high percentage of unemployment and the printing trades a relatively low percentage. It is, therefore, very apparent that unemployment is not an occasional or accidental condition to be met by charitable or philanthropic relief, but a continuing condition more or less varying in intensity, at times becoming acute—its improvement (elimination perhaps being impossible) being one of the most important problems of industry today.

The fact that it is so far reaching in its effect, in that it concerns so large a number of industrial workers, and so costly to industry through its effect on the purchasing power of communities, makes it obvious that not only employers and employees, but the public generally should unite in their efforts to obtain some definite information regarding its causes and to devise ways and means for its reduction.

The Significance of Unemployment

Unemployment is a brake on business, whether viewed from the standpoint of the manufacturer, whose lack of orders might be caused by diminishing purchasing power of the workers; from the standpoint of the wage earners, some of whom are out of work and others only working part time; or from the standpoint of the merchant, whose goods do not move on account of the reduced buying power of those of his customers who are out of work. From the standpoint of the public, it is a condition of grave concern, for in addition to lowering the economic strength of the community, it places upon the latter the burden of helping in one way or another to support the unemployed.

To the wage earner the amount of his unemployment is quite as important in determining his earnings as are his wage rates. Inasmuch as a worker's earnings mean a certain wage rate multiplied by so many days of work, fewer days of work cut as seriously into this earnings as lowered wages. Part time, therefore, is a factor lessening the steadiness of the wage earner's buying power. Generally speaking, unemployment means no wage income, no matter what the wage rate. From a psychological standpoint, unemployment produces weakened morale, discouragement, discontent, and a tendency to radicalism — evils at least as serious as those accompanying reduced buying power.

Industry goes through periods of feverish activity, which are followed almost immediately by others of more or less protracted stagnation. Today the producers are unable to turn out goods fast enough to meet the demand; tomorrow the orders cease to arrive and cancellations follow. Today various concerns bid against each other for workmen and tomorrow the same concerns are running on part time and perhaps some departments are entirely closed.

Suggested Remedies for Unemployment

Unemployment is not a recent problem. Since feudal days the "out of work" have demanded attention, and as destitution and necessity for relief usually followed unemployment, the matter was invariably left to the Poor Law authorities and then of necessity a distinction had to be made between the "impotent poor" and the "sturdy rogues." By a slow, painful and expensive process we have learned that charity, whether public or private is a demoralizing substitute for work, and that *the only real cure for unemployment is employment.*

The President's Conference on Unemployment held during 1921 resulted in the appointment of many committees to study the problem and make reports. Most of these studies have been concerned with the post-war emergency and have endeavored to indicate methods by which work could be provided, proceeding on the assumption in most instances that unemployment is essentially a local problem to be solved by each community. As a result householders were urged to paint their houses, paper their rooms, repair their furniture or do such other work as they had been contemplating. Corporations were urged to give part time work to as many as possible in order to avoid an increase in the number of unemployed. Employers were requested to take advantage of the opportunity to put their buildings and machinery in order and make contemplated additions to their plant. Municipal authorities, local and state, were requested to begin immediately whatever improvements had been contemplated and anticipate as far as possible the needs in repairs and new work for the next few years. Much suffering has been avoided as a result of this publicity by the hastening and completion of much work that otherwise would have been postponed or neglected. Our experience during the last depression, however, has taught us the stern necessity of stabilizing industry in order that periods of frenzied effort and stagnation may not alternate.

For nearly two centuries friendly and benefit societies in England have received contributions from members and in return have paid benefits when their members were out of work. Membership in those societies was voluntary.

In 1894 the Canton of St. Gaull, Switzerland, introduced a scheme for the compulsory insurance of all workmen earning less than five francs a day. In addition to the contributions from the members there were subsidies from public funds. The scheme was abandoned after a two-year experiment as it was impossible to persuade all the workmen to join the fund or to pay their dues after joining.

The Ghent Plan

In 1898 a commission was appointed by the City Council of Ghent, Belgium, to report some plan of unemployment relief to that city. Following recommendations of this commission, a law was passed which became operative August 1, 1901. Under the provisions of this Ghent plan, workmen are encouraged to unite in approved societies or trade unions for mutual assistance during unemployment. Contributions paid to these societies by employed workmen are supplemented by municipal and state grants. Benefits are paid to unemployed members after a waiting period. The plan of subsidizing trade union benefits has been tried out with considerable success along the line of the Ghent plan in Denmark, France, Norway and Holland. It should be remembered that both under the compulsory plan of St. Gaull and the voluntary Ghent system contributions were paid only by the workmen aided by grants from municipal and state funds. The employer was not required to make any contribution.

British Unemployment Insurance

A brief review of the conditions preceding the adoption of Unemployment Insurance in Great Britain is of interest. In Great Britain the responsibility for self-support was placed squarely upon the workman. He was encouraged to join a benefit society, one of the functions of which was to assist its members during unemployment. To the casual laborer, however, these societies were of little use, and when a workman found himself incapable of supporting a family he was obliged to turn to the Poor Law Authorities. Their answer to his appeal was usually the workhouse with its accompanying work test. Here he was provided with the barest necessities, but in accepting even these he became classed as a pauper. He was given a rough kind of work, and from association with those who were usually found in these institutions, a self-respecting workman was likely to degenerate. These benefit societies undoubtedly fulfilled their original purpose of reducing the number of those who came upon the town, but as constructive agencies they seem to have failed.

In 1886 during a period of considerable unemployment, Mr. Joseph Chamberlin, at that time President of the local Government Board, advised municipal authorities to undertake outdoor relief work which was to be conducted outside the workhouses and was not to brand the recipient with the stigma of pauper. In 1905 during another period of unemployment, the Unemployed Workmen Act was passed. Under its provisions a number of Labor Bureaus were set up to serve as employment exchanges and relief agencies. Workmen were encouraged to emigrate to places where work was more plentiful. Although considerable experience was gained through this Act it cannot be defined as either successful or popular. Conditions did not improve as rapidly as had been expected, and during the next few years investigation and discussion were the rule. This culminated in the passage of the Labor Exchanges Act in September, 1909, and early in 1910 these exchanges began to be opened throughout England. The purpose of this act was to bring together employers in need of workmen and unemployed workers. It was hoped to improve the condition of the casual laborer and to gain definite information upon the general subject of unemployment, but the main purpose in the act seems to have been the provision of a working basis for the Unemployment Insurance Act shortly to be introduced.

On July 15, 1912, the National Insurance Act became effective. It made unemployment insurance compulsory for all workmen in several industries, consisting for the most part of building, shipbuilding, and the engineering trades. This brought under the Act about two and one-half million workers. In 1916 munition workers were added to the group of insured and in 1920 the scheme was increased to embrace practically all of the industrial population. Persons engaged in agriculture, private domestic servants, government employees, and a few other minor groups were not included, but about twelve and one-quarter million persons came under the scheme. Under the original act each man paid into the fund a weekly contribution of 2½d. The employer also paid a contribution of 2½d. and the state added one-third to the joint contributions of the employer and workman. In return for these contributions benefits to the amount of 7s. a week were to be paid for not more than fifteen weeks in a year to men who were unemployed, when such unemployment was not due to a trade dispute, to loss of work through misconduct, or where the workman had not left his employer voluntarily without just cause. There was a waiting period of a week after the unemployment was reported before benefits were paid. Both the contributions paid and the benefits received by women and children were smaller than in the case of men.

In 1919, since a considerable reserve had accumulated, the benefits were increased from 7s. to 11s. a week for men. In 1920 benefits were again increased to 15s. a week for men, and to meet this added expenditure the contributions were raised to 4d. from the worker, 4d. from the employer and 2d. from the state. At this time the number of contributions required before a worker was eligible to receive benefits from the fund was decreased. In 1921 the benefit was again increased, this time to 20s. although as the Act was originally introduced it called for but 18s. The contributions were increased to 5d. from the men, 6d. from the employer and 2¾d. from the state.

In June, 1921, benefits at the rate of two million pounds a week were being paid from the fund while the contributions were less than 350,000 pounds a week. In three months the insurance fund had been reduced from twenty-two and one-half million to eight and one-half million pounds. It was apparent that the fund would last for only about another month, and, therefore, another Act was passed reducing the weekly benefits from 20s. to 15s. for men and increasing the weekly contributions to 7d. from the men, 8d. from the employer and 3¾d. from the state.

Whenever an employee goes to work at present in Great Britain he leaves a pass-book with his employer; each week the employer fixes stamps in his book for his own and the employee's contribution to the insurance fund. This process continues as long as the employee is at work. If he loses his job he goes with this book to the nearest employment office, notifies them that he is out of work and asks for a new position or an out of work benefit. In case his application for benefit is approved, this is paid to him until he has exhausted his benefit or obtained work. He must report regularly to the employment office, sign his pass-book and prove that he is still out of work. In case suitable employment is found for him he is expected to accept this. He is not, however, supposed to accept work in an establishment where a strike is in process, or at a rate of wages lower or on conditions less favorable than those which he habitually obtained, or in another district at less than the customary rate of wages. In case the benefit is refused or stopped by the insurance officer in charge of the local exchange, the workman has the right to appeal to the Court of Referees appointed by the Ministry of Labor; in all cases where the Court of Referees and the insurance officer agree, the decision is final. In case of disagreement the insurance officer may appeal to an umpire appointed by the Crown. In looking over several hundred cases decided by the umpire it is evident that the most common cause for dissatisfaction on the part of a worker is that he should be obliged either to accept some position which does not appeal to him or lose his out of work benefit.

High Hopes Not Realized

In reviewing the experience of Great Britain with unemployment insurance during the ten years which have elapsed since the act went into effect, it is evident that the high hopes which were entertained at its inception have fallen far short of realization. The employment exchanges proved to be an unwieldly and expensive piece of machinery. Certain radical groups in England, taking advantage of the general dissatisfaction with the unemployment insurance scheme, claim that the only way out of the present situation lies through the abolition of the entire capitalistic system. They claim that one of the corner stones of this system is a continual over-supply of labor, and that inasmuch as capital has proved itself unable to make use of the available supply of labor, the system should be scrapped and something else introduced in its place. One of these radicals said, "Unemployment is at the root of the whole of the social evils of the day and at the root of the capitalist system, and any legislation must deal with it from the point of view of destroying unemployment rather than of making unemployment tolerable. Employment depends upon the primary trades getting access to their raw materials."

Many plans have been advanced in England to replace or supplement the Insurance Act, as there is a widespread feeling that the present act is little better than a makeshift and does not reach the real root of the question. In the meantime the Insurance Fund is practically bankrupt and is functioning only through the Government guarantee.

A number of progressive employers in England have recently brought forward a plan supplementary to the Insurance Act, assuring to single men 50 per cent of their wages during unemployment and to men with dependents a larger proportion with a maximum benefit of five pounds weekly. Under its provisions workmen would contribute one penny in every 10s. of wages, which is somewhat less than 1 per cent; the state would pay for the cost of administration, together with a subsidy; the remainder, estimated at about 2 per cent of the wage bill, would be contributed by the employers. In the words of the promoters of this plan:

> Essentially the proposal is one to compel industry to create a wages equalization fund, and to give employers an incentive to eliminate every removable cause of unemployment. It is suggested that not only would such a policy be worth almost any cost in the suffering it would alleviate, but that it would prove in practice to be just as sound a policy as a dividends equalization fund.

Rowntree and Company of York, England, and several other progressive firms have already set up such an equalization fund, which is supplementary to the Insurance Act. It has proved to be a commendable step forward in the way of providing continuous pay for the unemployed of their plant.

The most elaborate practical attempt to provide continuous wages for workmen in England has been through the Building Guilds. Following the war there was a great shortage of houses for the workmen of the country, and under the Housing and Town Planning Act of July, 1919, the Ministry of Health was authorized to require the building of such houses under its supervision. Under this plan several hundred houses have been erected under contract with the

Building Guilds. The Co-operative Wholesale Society supplies the raw materials, the Co-operative Insurance Society guarantees the fulfillment of the contract and the Guild furnishes the workmen who are paid the standard rate of wages. All materials are furnished at cost with an addition of forty pounds per house to enable the Guild to furnish continuous pay to its workers, plus a slight margin for administrative expenses and interest upon borrowed capital.

An International Effort

The latest important move was made by the International Association of Unemployment when a general meeting was held in September, 1923, at Luxemberg. This association was organized in 1910 but suspended its activities for nearly ten years on account of the war. The meeting was attended by about one hundred and fifty delegates from eighteen countries.

Mr. Herbert Hoover, Secretary of the U. S. Department of Commerce, designated Dr. John B. Andrews, of the American Association for Labor Legislation, to attend the meeting in the capacity of a semi-official observer. The intensity of the unemployment crisis of 1921-1922 was pointed out and as a result of the discussion a committee was appointed (the U. S. representative being chairman) charged with the duty of submitting to the meeting a draft resolution embodying a general program of action. The resolution was submitted and adopted by the meeting in the following form:

> The International Association on Unemployment, in conference assembled on September 11, 1923, at Luxemberg, having considered the state of the labor market throughout the world and the alarming number of workers involuntarily unemployed, urges on all countries a very careful reconsideration of the whole menacing problem of unemployment; considering that the economic disorganization provoked by the war is aggravated by the failure to adopt an economic policy of international cooperation, it invites its national sections to examine the following suggestions:
>
> 1. To substitute as soon as possible for the policy of exaggerated protection, which is a relic of war economy incompatible with a state of peace, a policy of greater freedom for the circulation of goods, effected where possible by customs unions between countries;
> 2. To improve the financial situation and, above all, to prevent further monetary catastrophies, with the assistance of the principal countries concerned in the reestablishment of normal international financial relations;
> 3. To establish in each country, and as far as possible according to a uniform system, complete statistics of production and of economic resources and needs, so as to encourage the cooperation of the managers of industry in providing a good distribution of work and of the factors of production throughout the world;
> 4. To facilitate a desirable distribution of population;
> 5. To develop an adequate and permanent system of public employment exchanges, with cooperation between the systems of different countries;
> 6. To make unemployment insurance general and to consider the suggestions of experts and the result of practical experience with a view to bringing about greater regularity of employment;
> 7. To promote the long-range planning of public works so as to increase their execution during periods of industrial depression;
> 8. To increase educational facilities and to develop machinery for vocational guidance with a view to directing labor into the most desirable and efficient channels.
>
> The International Association on Unemployment therefore recommends, in view of the alarming nature of the present situation and the threatening consequences which are to be feared, that prompt action should be undertaken on the above mentioned program.

Proposed Legislation in the United States

During the past few years bills providing for the compulsory insurance of workmen against unemployment have been introduced in four state legislatures in the United States, but all of these bills have failed to become laws. The two most recent attempts to pass legislation of this kind were by bills presented at recent sessions of the legislatures of Wisconsin and Massachusetts. By the provisions of the Wisconsin bill, an employee who had been at work for six months during the year was to receive the benefit of one dollar a day for thirteen weeks in case of discharge through no fault of his own. Neither the employee nor the state were to make any contributions toward these payments. The possibility was afforded the employers of the state to insure against this contingency through a mutual company controlled by the employers of the state.

The bill introduced in the Massachusetts Legislature in 1922 was somewhat different in that it applies to employers and employees engaged in gainful occupations employing three or more persons. Several classes of employees are specifically excluded, including those engaged in interstate or foreign commerce, public employees, farm laborers, domestic servants, those in receipt of an unearned income of over $500.00 a year, and those whose total annual income exceeds $1,560.00 or who are mainly dependent on others. The bill provides compensation from the last employer for those who are involuntarily unemployed. It provides also that an employee shall not forfeit his right to compensation because he has declined:

> (a) An offer of employment in a situation vacant in consequence of stoppage of work due to a strike, or lockout; or—
>
> (b) An offer of employment in the employment district where he was last ordinarily employed at a rate of wage lower than the then prevailing rate of wage in his usual employment or in similar employment for which he is fitted; or—
>
> (c) An offer of employment in any other employment district at a rate lower than the then prevailing rate of wage in his usual employment or in similar employment for which he is fitted, or without prepayment, by the insurer on behalf of his last employer, of his railroad fare to such other employment district as provided in a sub-division of this section.

The compensation of benefit is at the rate of $1.50 per day, or 60 per cent of the average daily wages during the last thirty days of employment, whichever is less. There is a waiting period of six days, and the benefits are limited to thirteen weeks in a calendar year or in the proportion of one week for every four weeks in service. In order to allow the system to be started, benefits were to be limited to three weeks for 1923, and six weeks for 1924 and 1925. To receive unemployment compensation the employee must have been employed for twenty-six weeks; must register at the nearest free employment office; must be capable and available for work, and unable to obtain it; and must not have exhausted his right to unemployment compensation. The administration of the bill was to be left to the Department of Industrial Accidents, which should divide the state into employment districts with at least one free employment office in each district. The insurance of the obligation in any Liability Insurance Company, either stock or mutual licensed in the state was to be compulsory. Disputed claims were to be heard by a member of the Department of Industrial Accidents, and if a claim for review were filed, a reviewing board might hear the parties and revise the decision. After such a hearing an appeal might be taken to the Superior Court of the County; from its decision there might be no appeal upon questions of fact.

Provisions of Industrial Firms

Several progressive firms in this country have established schemes along the line of continuity of employment rather than unemployment insurance. Most prominent among these is the Dennison Manufacturing Company of Framingham, Mass. The idea is to take all possible steps in the way of preventing unemployment by making transfers of employees, reducing seasonal orders, changing delivery dates on out of season items, etc. The Dennison Manufacturing Company has also taken some steps for the relief of unemployment, the board of directors having set aside out of profits an unemployment fund, accumulating over a period of five years. This fund is managed by a joint committee. The company does not guarantee permanence of employment, or maintenance of a regular wage rate or renewal of the fund. In cases of temporary lay offs, workmen are paid 90 per cent of their regular wage if they have dependents, and 60 per cent if without dependents. Regarding the working of this plan an official of the Company states as follows:

> What we are doing in this matter is entirely experimental and we have not had full opportunity as yet to determine the wisdom of our methods. While we are not convinced that all the provisions of the plan are wise and workable, we do believe very strongly that the philosophy behind it is essentially sound.

The Treasurer of Deering, Milliken & Company, of New York, states that:

> Unemployment insurance, as developed in certain of the companies which we represent, has been in operation for only a comparatively brief period; yet it has thus far worked so successfully, particularly in meeting the strain of the present industrial depression that certain favorable conclusions may now be drawn from it.

Their "Partnership Plan," as they call it, is in operation in five plants—three in the south and two in the north. Control is vested in three boards: Board of Operatives, Board of Management, and Board of Directors. The funds are distributed as follows: operatives are paid current wages; capital employed is credited the legal rate of interest. Then two sinking funds are set up, designed to make the wages of both capital and labor constant. The balance remaining after these sinking funds are cared for is divided fifty-fifty between capital and labor. The sinking fund for capital consists of 15 per cent of the earnings over and above capital's wage of 6 per cent. This fund is designed to make up the deficit below 6 per cent in the earnings of lean years. As this fund comes out of the net earnings, which according to their plan belong to capital and workers equally, the fund is in reality a delayed sharing on the part of both capital and workers in losses. The other sinking fund, which they call the Unemployment Guarantee Fund, consists of 15 per cent of net earnings remaining after the payment of wages to both capital and labor. From it all those on a weekly or hourly basis of wage receive half pay during periods of unemployment. An effort is made to keep the fund at about $50,000.

A number of other concerns have devised schemes having in view provision for income in old age. Prominent among these is the Westinghouse Manufacturing Company, which has a life insurance and savings plan similar to group insurance, except that $500 is the amount of the policy issued and this does not increase unless the employee joins the savings fund, when it increases to $2,000 after fifteen years of service.

The firm of E. E. Rice & Company, of Boston, Mass., is active in assisting employers to establish a system which they call Income Building Thru Service Recognition, which takes care of pensions, incapacitated workers, etc. It is contributed to by both employer and employee, on either a ten year or a five year plan based on earnings.

The Case for Unemployment Insurance

In spite of the fact that our highest aim should always be the prevention rather than the relief of unemployment, the fact remains that there are arguments in favor of compulsory unemployment insurance. Unemployment results primarily from undue expansion of credit during good times. The manufacturers of this country possess a capacity to produce in excess of the demands for their goods. They are able to obtain credit from banks if they can show a reasonable certainty of profit. As soon as an industrial depression appears, employers are ready to discharge their surplus workmen, to search for other employment or to be supported by the community. If the employers were confronted with the necessity of providing a reserve against unemployment they would not be so ready to expand during good times, nor would bankers be so willing to furnish them additional capital.

Compensation for unemployment would probably work out in the same way as did compensation for industrial accidents. Compensation awards for accidents have not only saved the employee from financial embarrassment during a period of disability, but have forced the employer to pay more attention to the introduction of safety devices. In this way the burden of needless suffering has been greatly reduced. *The risk of unemployment belongs to industry nearly as much as the risk of injury.* If the responsibility for continuous employment or a reasonable unemployment benefit were placed upon industry, and the employer were forced to insure against this, he would find a way of stabilizing his industry and avoiding unemployment just as he found a way of reducing the frequency of industrial accidents.

The fear of unemployment is a constant source of worry to the average workman and prompts him to limit his efficiency in order to make the work last. If he were assured of a regular income from the industry, it is claimed, this temptation would be removed. The fear of unemployment is advanced as one of the principal causes of industrial unrest. The workman who is thrown out of employment through no fault of his own and has to hunt for a job, becomes bitter, and turns naturally to the most radical agitators for leadership.

In its final analysis the functions of management are bound to increase in scope as efforts are made to bring closer coordination and regularity within plants and industries, between establishments in localities, and within the nation. This functioning will apply not only to providing greater regularity in the supply of raw materials, standardizing products, coordinating the activities of sales and production departments and reducing labor turnover, but it will extend to encouraging diversity of local industries, centralizing local labor markets, dovetailing employments and developing a system of transfer and promotion. Ultimately the process of coordination must be extended between nations in order that economic systems among modern peoples may function with greater steadiness. The more the future situation can be anticipated, the more it will be possible to establish a basis of control over normal production, distribution and consumption and over the fluctuation from prosperity to depression.

As a result of the British experiment in compulsory unemployment insurance, attention of those in this country interested in this problem is being directed rather to the attempt to stabilize industry. In the deficiency of effective preventive measures, the principle of insurance may well be applied for protection against the risk of unemployment, but I think it would be wise before attempting to use such a remedy to seek to eliminate as far as possible, the causes of unemployment and to reduce the risk to a minimum. It is my belief that the fairest distribution of the expense of unemployment would be to have those who share in the responsibility for unemployment, the employer, the employee and the consumer, share in the burden of unemployment as far as possible in such a manner that the amount of the burden they share will be reduced in proportion to the extent to which they successfully assume their responsibility for the prevention of unemployment. I believe also that unemployment insurance to be successful must be based on the principle of a premium graded on the basis of continuity of employment.

Certainly the magnitude of prevailing unemployment and the economic circumstances in which the United States and all modern industrial nations find themselves point to the need for scientific study of the problem of unemployment and for early organization and prompt action looking toward its solution.

Third Annual Management Week

Meetings throughout the United States

October 20-25, 1924

PLANS for Management Week for 1924 are being formulated by a joint committee in New York City representing the five societies concerned with management problems. W. H. Leffingwell represents the Taylor Society; Henry Bruere, the American Management Association; Sterling H. Bunnell, The American Society of Mechanical Engineers; E. M. Robinson, The Society of Industrial Engineers, and C. R. Stevenson, the National Association of Cost Accountants. Mr. Stevenson is chairman of the committee and Ernest Hartford of the American Society of Mechanical Engineers is serving as secretary.

Last year's plan of regional organization with seventeen regional directors has been superseded by a project of local committees in some seventy communities where one or more of the cooperating societies has a section. Each local committee — composed of the chairmen of the local sections or specially designated members of the cooperating societies—will organize a local Management Week meeting, and will endeavor to secure the interest of the local Chamber of Commerce, civic organizations, Rotary Club, Kiwanis Club, etc., so that they will devote their meetings during the week of October 20 to a discussion of some phase of management. Similar meetings will be organized in schools and colleges, and talks on management will be broadcasted from various large stations of the country.

"Better Management through Budgeting" is the keynote of the meetings this year. Topics suggested for discussion include the application of budgeting to the various functions of management and to various types of business enterprise, practical problems of budget administration, the effect of budgeting on sales, production, employment and profits, practical methods of coordinating sales and production, and budgeting as a form of accounting. It is hoped that the accumulation of the local examples of the successful use of budgeting will be helpful and impressive.

Committees are being organized in the following places: Akron, Albany, Atlanta, Baltimore, Birmingham, Boston, Bridgeport, Buffalo, Charlotte, (Greenville, Raleigh), Central Pennsylvania, Chattanooga, Chicago, Cincinnati, Cleveland, Colorado, Columbus, Dallas, Dayton, Detroit, Erie, Grand Rapids, Hartford, Hawaii, Houston, Indianapolis, Iowa, Kansas City, Knoxville, Lehigh Valley, Los Angeles, Louisville, Memphis, Meriden, Milwaukee, Minneapolis, Nebraska, New Britain, New Orleans, New Haven, New York, Oklahoma, Ontario, Oregon, Philadelphia, Pittsburgh, Plainfield, Providence, Rochester, St. Louis, St. Paul, San Francisco, Savannah, Schenectady, Seattle, Spokane, Syracuse, Toledo, Utah, Utica, Vermont, Virginia, Washington, D. C., Waterbury, Western Massachusetts, Worcester. Members in other localities who are interested in organizing Management Week programs are requested to write the Society or the Secretary of the Management Week Committee, 29 W. 39th Street, New York City.

A European Library of American Management Literature

One Permanent Result of the Prague International Management Congress

IN CONNECTION with the Prague International Management Congress, the Taylor Society cooperated with the Joint Committee on American Participation in assembling a library of management literature for display at the Congress and a permanent contribution to the library of the Masaryk Academy of Work.

Societies, publishers and individual authors contributed a total of more than three hundred volumes and two hundred and fifty magazines, pamphlets and reprints, and a number of firms practicing scientific management prepared scrapbooks of photographs, forms and other exhibits of special interest and value. Each book or separate carried the name of the donor on a book-plate which read: "Presented to the Management Library, Masaryk Academy, Prague, as a testimonial of the esteem in which Czechoslovak industry is held by American industry and a permanent reminder of the First International Management Congress, Prague, July 21-24, 1924."

The following publishers contributed one to twenty-six volumes each: Engineering Magazine Co.; The Ronald Press Company; A. W. Shaw Co.; John Wiley & Sons, Inc.; The H. W. Wilson Company; Houghton Mifflin Company; E. P. Dutton & Company; The University of Chicago Press; J. B. Lippincott Co.; Doubleday, Page & Co.; Harvard University Press; D. Van Nostrand Company; P. Blakiston's Sons & Co.; Boni & Liveright; Bragdon, Lord & Nagle Co.; Cost Engineer Publishing Company; Ginn and Company; Harcourt, Brace & Company; Harper & Brothers; The Industrial Press; Longman's, Green and Co.; Prentice-Hall, Inc.; G. P. Putnam's Son's; U. P. C. Book Company, Inc.; World Book Company.

Other institutions sent one to twenty-four volumes: Alexander Hamilton Institute; American Federation of Labor; American Engineering Council; LaSalle Extension University; American Association of Engineers; Amos Tuck School of Dartmouth College; Academy of Political Science of Columbia University; Russell Sage Foundation; Carnegie Foundation for the Advancement of Teaching; Industrial Extension Institute; Burroughs Adding Machine Company; General Electric Company; American School of Home Economics; Griffenhagen & Associates.

Among the authors presenting their books were Frank B. Gilbreth, Lillian M. Gilbreth, Harrington Emerson, Paul M. Atkins, W. H. Leffingwell and Horace B. Drury.

The cooperating societies contributed yearbooks, proceedings, and miscellaneous publications. The American Management Association, American Society of Mechanical Engineers, National Association of Cost Accountants, Society of Industrial Engineers and Taylor Society and the American Society of Civil Engineers and American Institute of Mining and Metallurgical Engineers from the Founder Societies are represented by eighty volumes and more than one hundred pamphlets.

Special Contribution of the Taylor Society

A committtee of the Taylor Society, headed by Morris L. Cooke of Philadelphia, began last March to assemble for the Masaryk Academy a collection of materials representative of scientific management—books, monographs and exhibits. The result was a significant library, including five books by Frederick W. Taylor in English; ten translations of Taylor's books into six foreign languages; eight books about Taylor or the scientific management movement; twelve by men more or less directly associated with the scientific management movement, and many others having general application. Some of these are out of print and not ordinarily available. The books assembled by the Taylor Society carried a special presentation slip with a quotation from a letter Mr. Taylor wrote to Henri LeChatelier: "I desire nothing more than that my ideas spread; it matters little the dress under which they circulate."

The complete list follows:

George D. Babcock, The Taylor System in Franklin Management

Ray Stannard Baker, The New Industrial Unrest

Carl G. Barth, Supplement to Frederick W. Taylor's "On the Art of Cutting Metals"

John R. Commons, Industrial Goodwill

Frank B. Copley, Frederick W. Taylor, Father of Scientific Management

Charles Day, Industrial Plants

Horace B. Drury, Scientific Management

Major William E. Dunn, Scientific Management Applied to Instruction and Training in Field Artillery

Harrington Emerson, The Twelve Principles of Efficiency

Holden A. Evans, Cost Keeping and Scientific Management

David Friday, Profits, Wages and Prices

H. L. Gantt, Work, Wages and Profits

Frank B. Gilbreth, Motion Study; Primer of Scientific Management

CHARLES H. GRIFFITTS, Fundamentals of Vocational Psychology

JAMES HARTNESS, Human Factor in Works Management

H. K. HATHAWAY, Routing Considered as a Function of Up-to-Date Management

HEARINGS BEFORE THE COMMITTEE ON LABOR, A bill to Regulate the Method of Directing the Work of Government Employees

HEARINGS BEFORE SPECIAL COMMITTEE OF THE HOUSE OF REPRESENTATIVES, To Investigate Taylor and other Systems of Shop Management

ROBERT FRANKLIN HOXIE, Scientific Management and Labor

CHARLES W. HOYT, Scientific Sales Management

SCUDDER KLYCE, Universe

RICHARD H. LANSBURGH, Industrial Management

W. H. LEFFINGWELL, Office Manual; Scientific Office Management

DWIGHT V. MERRICK, Time Studies as a Basis for Rate Setting

HUGO MUNSTERBERG, Psychology and Industrial Efficiency

WILLIAM C. REDFIELD, The New Industrial Day

DR. ING. GEORG. SCHLESINGER, Selbstkostenberechnung im Maschinenbau

WALTER DILL SCOTT, Increasing Human Efficiency in Business

WALTER DILL SCOTT and ROBERT C. CLOTHIER, Personnel Management

ING. RUDOLF SEUBERT, Aus der Praxis des Taylor-Systems

J. RUSSELL SMITH, The Elements of Industrial Management

FREDERICK W. TAYLOR, On the Art of Cutting Metals; Principles of Scientific Management and translations into French (2), Swedish, Russian, German, and Japanese; Shop Management and translations into Dutch, Russian and German

FREDERICK W. TAYLOR and SANFORD E. THOMPSON, Concrete Costs; A Treatise on Concrete, Plain and Reinforced

TAYLOR SOCIETY, Frederick Winslow Taylor (A Memorial Volume)

ORDWAY TEAD, Instincts in Industry

C. BERTRAND THOMPSON, Scientific Management; The Theory and Practice of Scientific Management

TUCK SCHOOL CONFERENCE, Scientific Management

Bulletins, Reprints and Pamphlets

In addition to these fifty volumes, the Taylor Society contribution included about one hundred separates, comprising a file of the Bulletin and the following reprints and pamphlets.

L. P. ALFORD, Ten Years Progress in Management

A.S.M.E. SUB-COMMITTEE ON ADMINISTRATION, Present State of the Art of Industrial Management, 1912

CARL G. BARTH, Slide Rules for the Machine Shop as a Part of the Taylor System of Management

BROTHERHOOD OF RAILWAY MECHANICS, INC., Supreme Lodge, 1912 Convention Number

HENRI LECHATELIER, Preface to the French Edition of "The Principles of Scientific Management"

MORRIS L. COOKE, Public Engineering and Human Progress; Scientific Management as a Solution of the Unemployment Problem; Will Labor Make the Next Move?

FRANK BARKLEY COPLEY, Frederick W. Taylor, Revolutionist

JAMES M. DODGE, A History of the Introduction of a System of Shop Management

H. L. GANTT, A Bonus System of Rewarding Labor; Productive Capacity a Measure of Value of an Industrial Property; Efficiency and Democracy; Expenses and Costs; Training Workmen in Habits of Industry and Cooperation

H. K. HATHAWAY, Standards

HARRY ARTHUR HOPF, A Practical Method of Solving the Salary Problem; Efficiency in Business; Job Analysis as an Aid to Industrial Stability; Modern Office Planning; Office Administration; Personnel Activities in Financial Institutions; Salary Standardization as an Aid to Industrial Stability; Surveying My Day; Report on Personnel Activities in the Federal Reserve Banks with Exhibits

W. H. LEFFINGWELL, Standardization; Training the Office Force; Making Every Foot of Space Pay Its Way; Training Slow Hands to Work Faster; What Challenging Each Method Saves for a Business; The Use of a Measuring Stick in the Office; Seven Space-Saving Plans that Earned Profits; How to Manage; Clerks that Gnaw at Profit; A Practical Plan for Rating the Efficiency of an Office Organization; Improving Your Service by Watching Complaints; Nine Improvements on the Way It Was Always Done; A Few Specific Thoughts of Increasing Sales; Organizing the Work of the Non-Selling Help; Results from Improved Management Methods; Managing the Move; Standardization in the Office

FREDERICK W. TAYLOR, A Comparison of University and Industrial Methods and Discipline; Why Manufacturers Dislike College Students; The Principles of Scientific Management

SANFORD E. THOMPSON, Time Study and Task Work

ROBERT B. WOLF, Modern Industry and the Individual

Special Exhibits

The most valuable of the contributions through the Taylor Society are manuscript materials, scrapbook collections of standing orders and forms, and exhibits illustrating management procedures in specific plants.

This special material included:

TABOR MANUFACTURING COMPANY, Complete set of standing orders, affording a working picture of the procedure used in perhaps the best known scientific management plant—the plant used for exhibition purposes by Mr. Taylor during the later years of his life; Complete work file for a typical product including every paper exactly as used in the shop.

WATERTOWN ARSENAL, Exhibit of forms and photographs giving a complete outline for carrying an order through the shops.

THE YALE & TOWNE MANUFACTURING COMPANY, Exhibit of major forms; an evolution in scientific form of management as introduced by Frederick W. Taylor.

W. H. MCELWAIN COMPANY, Exhibits of production and wage control.

FORBES LITHOGRAPH MANUFACTURING COMPANY, Exhibit of course of order through planning department.

THE JOSEPH & FEISS COMPANY, Exhibit of a system of personnel control.

EATON, CRANE & PIKE COMPANY, Exhibit of a typical route sheet folder.

PROCTOR & SCHWARTZ, INC., Exhibit of management practice.

The Holt Manufacturing Company, Exhibit on elimination of waste in industry (29 charts)

Clothing Manufacturers Association of New York, Exhibit of processes of coat making.

The Leffingwell-Ream Company, Graphic Exhibits: Executive Control; Functional Organization; Investigation and Research (2 charts); Layout; Planning and Control (2 charts); Posture Studies (2 charts); Reducing Overhead; Scientific Office Arrangement (2 charts); Standardization (2 charts).

Harvard Graduate School of Business Administration, Wharton School of Finance and Commerce, Industrial Engineering Department, Pennsylvania State College, Amos Tuck School, LaSalle Extension University, Exhibits illustrating teaching of scientific management in the United States. (In three books.)

Dwight V. Merrick, Nine volumes of Time Study Data. (Blue Prints).

Report in French of Visit of Charles deFreminville to United States in 1913. (Mimeographed).

News of the Sections

THE Central New York Section held its annual outing with the Central New York Purchasing Agents at Three Rivers, New York, on the afternoon and evening of Saturday, July 26. Owing to vacations the attendance was relatively small (twenty-five) but those that did attend thoroughly enjoyed indoor baseball, cards, and a typical Central New York fish, frogs legs and chicken dinner.

The next meeting is scheduled for August 25 at Syracuse, New York, probably at the Yates Hotel, beginning as usual with an informal dinner at 6:30. The subject for the evening will be a case presentation of the Bedaux Plan. Mr. George V. Lennon, Treasurer of the Stromberg-Carlson Telephone Manufacturing Company at Rochester, New York, will be the speaker of the evening. This case presentation follows up the June meeting when Mr. Keogh of the Bedaux Company explained the Bedaux Plan, it being the intention of the Central New York Section to present cases wherever possible in matters of this kind. A large attendance is expected at the August meeting because of the interest aroused at the June meeting.

The Cleveland Section has elected as Chairman, John Younger, Automotive Abstracts; Vice-Chairman, F. J. Kunze, American Multigraph Company; Treasurer, H. F. Mueller, The Printz-Biederman Company; Secretary, Harry Kaiser, Cleveland Metal Products Company; Directors, Elmer R. Krueger, The P. A. Geier Company and Mildred S. Cooke, The Landesman Hirschheimer Company. Keppele Hall, retiring Chairman, will serve as a Director for the next year.

Colonel B. A. Franklin, Vice-President of the Strathmore Paper Company, Mittineague, Mass., and of the Associated Industries of Mass., has been chosen as President of the New England Section. H. H. Farquhar continues as Secretary and Raymond Tweedy of the Manufacturers Research Association will serve as Chairman of the Committee on Meetings.

Reviews

Psychology for Students of Education. By Arthur I. Gates. The Macmillan Company, New York, 1924, pp. 482.

Had despairing old Ecclesiastes lived in our day when he sighed, "Of making many books there is no end," he would undoubtedly have referred to books on psychology in particular, for the last few years have witnessed a veritable flood of literature on all phases of this subject, from the "day by day" stuff so popular in its appeal as to rival the "best sellers" in other lines to the Freudian creations so ethereal in conception as to compare favorably with the airy fantasies of Edgar Allan Poe. Out of it all the hard-headed business executive has been able to draw very little practical help for the day's work.

To those of us who have been steeped in this sort of literature for a long time, Professor Gates's[1] new book, "Psychology for Students of Education," comes as a welcome relief. It is the old-fashioned psychology brought up to date. One need not read far to be satisfied that here is an author talking with both feet on the ground. Although the book is written chiefly for students in colleges and normal schools, it is the kind of book which will appeal to foremen generally, but especially to those who are engaged in teaching in industry. It is meant to be studied, rather than merely read, but even those who are not inclined to be bookish should find the material easy to grasp, especially in study groups, where there is opportunity for discussion. Stimulating questions at the end of each chapter, referring mainly to the learning problems of the schoolroom, can be paralleled by similar questions bearing on experiences in the shop.

Books relating to factory instruction which have come under the reviewer's observation in the last five years, while they no doubt filled a great need in shops of the old type, have been of questionable value to the instructor working under scientific management. Job analysis, instructional order, progress charts and the like, about which these books said so much, are well-established fundamentals in a scientifically managed shop, hence things about the creating of which he needs to concern himself but little. What such an instructor needs primarily is a working knowledge of psychological principles to change his uncertain, impoverished method of getting his ideas across into something more sure and varied. In this important element these books on shop instruction are lamentably weak. A book like Dr. Gates's Psychology will serve admirably to fill this big gap.

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The first part of Gates's "Psychology for Students of Education" is devoted to the necessary physiological background of nervous activity, not omitting the functions of the various glands. An abundance of illustrations in this and other portions of the book helps to popularize the scientific text for the beginner.

The succeeding chapters cover the whole range of subjects connected with the mechanics of normal human behavior, such as habits, instincts, emotions, the laws of learning, intelligence and its measurement. An illuminating chapter on the effects of various factors, such as environment, drinks, drugs and the like, should be of special interest to factory executives.

The last few chapters are given up to an exposition of intelligence factors and some of the tests which have been devised to measure them. Intelligence testing has passed beyond the stage of experiment and become a science. Those of us who have had our instruction problems lightened by the application of such tests upon new workers at the time of employment know their great value as an agent in eliminating the unfit at the beginning and saving the worker useless effort, the instructor useless agony, and the organization useless expense.

There is very little material in the whole book applicable to schools and academic subjects alone. The typography of the volume, the illustrations, the suggestive questions at the end of each chapter all help to remove it from the class of "dry-looking stuff." The clear, readable style of the author should make the book appeal to that increasingly important group of teachers outside of school walls—the instructors in industry.

EDWARD G. HEINMILLER.[2]

Psychological Tests in Business. By Arthur W. Kornhauser and Forrest A. Kingsbury, The University of Chicago Press, Chicago, 1924, pp. 180.

As a science matures it necessarily grows continually more complicated until ultimately no one man grasps the whole but each worker specializes on some small, previously insignificant part. When this stage arrives it becomes practically impossible for anyone to write a simple statement of the underlying principles, the particular field which the writer happens to have selected for his own endeavors colors so highly his view. This adds special value to the occasional stopping and summing up in a simple concrete form of the progress which has been made, and renders a book, such as "Psychological Tests in Business" by Kornhauser and Kingsbury, of more than passing value, making it something of a milestone to which to refer when the more complicated stage has been reached. For psychological testing is rapidly approaching a science, and it will not be long before it reaches that ramified level where each worker is a specialist.

One evening not long ago at an informal gathering Mr. Eugene Smith told me that the modern child must be taught to read at a rate of five hundred words a minute, if one expects him, when he grows older, to keep up with modern thought. When I found that only by continually driving myself could I, at that time, reach one hundred words a minute, I realized why so many interesting things take place in the world, of which I am wholly ignorant. Here is an opportunity for a business man to post himself in the fundamentals of psychological testing in two or three evenings at the most, or if he reads at the rate of a modern well brought up child in a little over two hours, for the book consists of only one hundred eighty pages.

"Psychological Tests in Business" contains no revolutionizing theories, no brilliant discoveries, but is a sane, sensible statement, not overemphasized, not underestimated, of the present progress in psychological testing.

The saneness of the book first appears under the heading, "What Is a Psychological Test?" (page 3): "The principle of the psychological test is, then, to use a sample of one's behavior to indicate his abilities or other tendencies, and hence to predict his probable future behavior."

If this definition of a test as a sample of one's thinking, or of one's work, could be constantly kept in mind, much useless criticism would be wholly eliminated and much worthless experimenting made needless. When a foreman gets a new man he does not put him immediately on his most difficult job, even if he may have been hired to do this particular piece of work, but he tries him out first on an easy, simple task to get some idea whether the new man is capable or not. In other words he samples the man's capacity: he gives the man in the strictest sense of the term a psychological test. This is all that psychologists are attempting to do, on perhaps a little more scientific basis than the foreman has done, but in the last analysis the same thing. Every concern whose foremen are today trying a man out on a first simple job is using psychological tests.

The second fundamental of Messrs. Kornhauser and Kingsbury's book is the insistence upon checking and rechecking results. First, a test must be tried and proved on workers who have already made good. If excellent clerks who have proved themselves on clerical work fail to pass a clerical test, it does not prove, as so many psychologists have felt it should, that the clerks were really no good after all. But it does show on the other hand the absolute worthlessness of that particular test. The first essential of a successful clerical test is that good clerical workers pass well.

Still this is not sufficient to prove the test worth giving, for the test must in addition predict what new employees will do, who have not had previous experience and who have not yet made good. A test must, therefore, be checked also under actual employment conditions and must be followed to see whether it does predict which new workers will make good and which will not. Even this, according to Messrs. Kornhauser and Kingsbury, does not suffice, for conditions are constantly changing and the results of a test must be continually followed and rechecked.

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Even if the test works, and works well, in predicting the future of new employees it is not of value unless it predicts better or more cheaply than the old employment methods of a personal interview, looking up past experience, references, etc.

The authors apologize at the beginning for their over-caution and for their emphasis on the limitations and shortcomings of tests, and yet one cannot but feel throughout the entire book the certain future of psychological testing. One feels it far more strongly by their sane statement than if glowing terms had been used.

If every manager who will ultimately be called upon to decide whether his particular organization will use psychological tests or not would read this book and if everyone who intends to give or develop new tests, whether as an expert or as an amateur, would steep himself in the principles set forth here, it would, I believe, put psychological testing on a much saner basis than at present and do a great deal for its future.

The first seventy-five pages of this book, "covering the nature of psychological tests," and "scientific method in constructing psychological tests for business" represent a solid foundation upon which to build.

JOHNSON O'CONNOR.[3]

The Technique of Executive Control. By Erwin Haskell Schell,[4] McGraw-Hill Book Company, Inc., New York, 1924, pp. 133.

This book is concerned with those problems of the individual executive which Oliver Sheldon had in mind when in his book, "The Philosophy of Management," he said, "Psychology must also be taught (i.e., to business executives)—not the deeper psychology of the scientist so much as the everyday psychology of factory relationships." Many books on organization and management have had to do with mechanical control or with the inclusive subject of labor relations. There has been a similar abundance of scientific books that have dealt with this or that phase of the mechanics or humanics of managerial problems. But out of all managerial experience and scientific discovery, writers have assembled remarkably little of the elements necessary for successful leadership and control of assistants and subordinates by the executive. This book is a contribution towards the filling of that gap.

"There has seemed little that is tangible or concrete in the art of the executive; and vague terms such as "personal magnetism' or 'radiating personality' have thrown a spell of enchantment over the processes of human control. To those who are searching for a constructive analysis of executive conduct, I offer this book."

Mr. Schell wisely sets a sharp limit to his purpose. "But between those individuals who have these few qualities (that is, making for successful executive leadership) in great measure, and those who do not have them at all, there lies the much larger number of individuals who are gifted in moderate degree. These are the persons whose progress may suffer because of the notion that executive technique is a matter of a sixth sense, an intuitive faculty which defies explanation, a 'hunch' which always tells the right things to do at the right time. . . . Now the truth is that such a viewpoint not only does no good, but it does great harm. The executive who follows an impulse usually relies upon some emotional stimulus, and in a majority of cases this reaction points to exactly the wrong thing to do. The leader who lets his own impulses guide is a good leader only for a mob, and we have no place for mobs in industry. Good leadership requires careful penetrative thinking and it requires absolute self-control." "It would be very helpful if we could set down definite rules of conduct to insure executive success in every case. . . . In the human laboratory when one personality impresses itself upon another, the result is not a simple reaction, it is a complex response springing from the individual consciousness or subconsciousness with a form and intensity which varies with the personality of the person impressed. . . . This would make our task appear rather hopeless were it not for two qualifying elements. The first is that there are certain tendencies and modes of behavior which are common to all of us. While these characteristics may be overlaid with differing patterns of personality, yet their universal presence gives the executive a basis for a thoughtful study of human behavior. Second, the executive can know himself. He can determine the methods and tools which his personality will allow him to use most effectively, and he can, therefore, build rules of self-conduct which will best suit his capacities. . . . It's clear then that we cannot be arbitrary in this discussion of executive conduct. Our purpose is not to provide information, it is to offer food for thought."

An executive is defined as "one who is responsible for the execution of work performed by others," or as the "medium for the flow of orders and policies from the administrators to the employees." The major "job of the executive" is described as the organization of the will of the employees. The book throughout assumes the individual executive's point of view. Questions of personal relationship between the executive and his assistants or subordinates thus occupy the book rather than fundamental economic and social questions.

A chapter is devoted to "Executive Tools," which are classified as "stimulating" (e.g., enthusiasm), "stabilizing" (e.g., calmness), "time-saving" (e.g., simplicity), "conforming" (e.g., firmness); "Restraining Tools" and "Tools for Fashioning Loyalty." Another chapter is devoted to a discussion of "authority," "responsibility" and "disciplinary problems" under the heading of "Executive Control." The chapter on "Executive Stimulation" repeats ground that has been many times covered when it discusses the constructive appeal that the executive may make to such "instincts" as "possession," "home and family" and "leadership," but the material is presented concisely and interestingly and with apt applications that give it freshness.

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After a chapter on "Executive Duties" come two valuable chapters on "Difficulties with Subordinates" and a final chapter on "Difficulties with Superiors and Associates." The treatment of each important item in each chapter includes a general statement of the problem, a discussion of the executive conduct which experience has found successful or unsuccessful in meeting it, and a series of questions calculated to provoke discussion or to call attention to common executive errors.

This is a worth while addition to managerial literature, and could profitably be placed in the hands of all higher and subordinate executives. Its chapters could be discussed with advantage at courses for subordinate executives and in courses in collegiate schools of business. The cases and the problems presented are the ones that are alive in any factory and they are treated concisely, readably and understandingly. Its value is not as a contribution to social philosophy, but as a contribution to a definite niche of management technology. The author wisely sets limits to his task and does that task well.

JOSEPH H. WILLITS.[5]

Applied Psychology. By Bernard C. Ewer, The Macmillan Co., New York, 1923, pp. 480.

In this excellent book of about five hundred pages, Prof. Ewer[6] has furnished an account of the present status of psychology and an introduction into its various fields. The purpose of the book is well outlined in the short preface. Here the author speaks of the difficulties which the reading public has experienced in being furnished on the one hand with highly technical discussions of specific phases of psychology, and on the other with popular articles that lack scientific foundation.

In his book he attempts to supply a volume in a field at present little occupied, namely, "to present in a readable form the principles, methods and results of scientific psychology as applied to problems in everyday life." He chooses three special fields as specially worthy of the attention of the general reader, namely, education, psychotherapy and industry, and after his general presentation, develops existing conditions in these fields very thoroughly.

To the reader who comes to the book with no knowledge of psychology, it furnishes an admirable introduction to the field. It lacks the overemphasis that characterizes some psychologies; it presents definitions with extreme care for exactness of meaning and also with considerable attention to fortunate, easily remembered wording. It gives enough of the history to furnish a background for statements made, and enough indication of trends, and references to other readings to serve as a stimulus for further study.

To the reader well acquainted with the literature and the practice of psychology, it furnishes an admirable review of information and to some extent a method of classifying knowledge and noting where the work has been rich in results, and where much in achievement is still to be desired.

The reader who comes to the book primarily for information on industrial psychology may perhaps be disappointed at the large amount of space given to the treatment of the psychology of education and the psychology of psychotherapy, but in order to understand the psychology of industry, it is necessary to understand the work being done in these fields also; and both the plan of the book as outlined in the preface and the accomplishment of the book as reviewed when concluding the final paragraphs show admirable balance.

The book furnishes an excellent introduction to the more specific works written by those in management and psychology who have devoted themselves exclusively to the industrial field. There are, of course, lacks. For example, there is no treatment of the pioneer and most important work of Dr. E. E. Southard, in correlating the findings of psychiatry and industry. The line drawn between psychology and psychiatry and the boundaries of the field of psychotherapy may perhaps be questioned, but the mere fact that the boundaries are brought up for discussion is of sufficient importance to justify the treatment in this book.

There is little attempt to consider the achievements outside this country, which is unfortunate, as so much, especially in the field of industrial psychology, has been done in countries abroad.[7]

Perhaps the strongest recommendation that can be given to the book for the reader interested primarily in management and anxious to get what he can of psychology to carry into that field is the *sanity* of the entire presentation. Any fair-minded reader who gives the book adequate attention is sure to feel that psychology is a real science, and that it has something of value to present to the industrial field. Only a wide reading of psychology and a close acquaintance with what is going on in the laboratories both of psychology and of industry can make one appreciate adequately the importance of this fact.

The appendix containing a selected list of books on applied psychology is interesting. While some books are included that would not be generally admitted as of value, and many are omitted which would prove stimulating and of practical and permanent value to the manager, especially in the list on Industry and Commerce, the list like the book itself is well thought out and well balanced.

It is to be hoped that "Applied Psychology" may be used as a textbook not only in the departments of psychology in the colleges but in schools of business administration and industrial management and engineering as well, and that it may receive a wide and general reading. It is both instructive and interesting and should be in the library of every engineer and every manager as well as every psychologist.

LILLIAN M. GILBRETH.[8]

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[7] See "Scientific Management in Other Countries than the United States," *Bulletin of the Taylor Society*, Vol. IX, No. 3, June, 1924.

[8] Consulting Engineer, Montclair, N. J.; Author of "The Psychology of Management."